

THE GENUS PRARAVINIA KORTH. (RUBIACEAE) IN BORNEO AND CELEBES

by

C. E. B. BREMEKAMP.

The genus *Praravinia* was created by KORTHALS (in TEMMINCK, Verhand. Nat. Gesch. Ned. Overz. Bezitt., Bot., p. 189, tab. 41, 1839-1842) for a plant which he had collected in the south-eastern part of Borneo. He described it as similar in habit and doubtless nearly related to *Urophyllum* WALL. His diagnosis of the genus, however, does not substantiate this point of view, for it contains two statements which seem to exclude the possibility of a near affinity: the aestivation of the corolla lobes is described as imbricate, whereas in *Urophyllum* and its allies it is always valvate, and the number of corolla lobes is said to be half as large as that of the stamens, a condition unknown not only in *Urophyllum* but in the whole family. As in the description of the species the aestivation is correctly set down as valvate, the first statement need not trouble us: the word "imbricate" in the generic diagnosis is obviously a slip of the pen. The other statement, however, is repeated in the description of the species, but it strikes one as anomalous that immediately afterwards the 8—12 stamens are said to alternate with the corolla lobes, as this of course would be impossible when the latter were but half as numerous as the first.

The discrepancy between the number of the corolla lobes and of the stamens led MIQUEL in his "Flora Indiae Batavae II, p. 225 (1857)" to consider *Praravinia* as a quite singular genus, rather out of place in the family Rubiaceae: it reminded him, he says, of the Samydeae (*Flacourtiaceae*). When he wrote this, he knew the genus merely from the description given by KORTHALS, but afterwards he found an opportunity to study the latter's material. In his "De quibusdam Rubiaceis, Apocyneis et Asclepiadeis" (Ann. Mus. Bot. Lugd.-Bat. IV, p. 136, 1869) he proposes, as a result of this investigation, to exclude the genus from the Rubiaceae, and to raise it to family rank. The new family, for which he introduces the name *Metrocladeaceae*, should be regarded, however, as nearly related to the Rubiaceae. The description of the genus given by MIQUEL is

much more detailed than the original one, but it unfortunately repeats its principal errors: the corolla is described as 4- to 6-merous, and its aestivation as imbricate. The male flower dissected by him is preserved in the Utrecht Herbarium; it is a fairly young bud, opened by a longitudinal slit. The corolla lobes had apparently been separated by a slight pressure, but I at once got the impression that it had been insufficient to effect a complete separation, and that the lobes were still cohering in pairs. I have boiled the flower therefore once more, and by exercising in my turn a slight pressure I succeeded in setting all the lobes free. Since then I have seen mature flowers of this and other species in which the isomery of corolla and androecium was unmistakable. MIQUEL's speculations on the taxonomic position of the genus were based therefore on a false supposition, and need no further consideration; the analysis carried out below will show that KORTHALS was quite right when he placed *Praravina* in the neighbourhood of *Urophyllum*.

The mistake regarding the aestivation of the corolla lobes was corrected in BENTHAM and HOOKER's "Genera Plantarum". In BOER-LAGE's "Handleiding tot de Flora van Nederlandsch Indie" as well as in K. SCHUMANN's monograph of the family in ENGLER und PRANTL's "Naturliche Pflanzenfamilien" the aestivation is also correctly described. Otherwise nothing in the description was changed by these authors, and no new facts were added to our knowledge of the genus. The incongruity between the number of the corolla lobes and the number of the stamens, which had weighed so heavily on MIQUEL's mind, apparently disturbed none of them, for they all accepted the genus as *Rubiaceous*.

Up to 1904 the genus remained monotypic, but in that year KOORDERS (Nat. Tijdschr. Ned. Ind. LXIII, p. 73, 1904) described two new species, both collected in Celebes. The first of these, *Pr. Teysmannii* Kds., could shed no light on the question of the heteromery between corolla and androecium, because no flowers were present, but of the second one, *Pr. Minahassae* Kds., male flowers in various stages of development were available, and it appeared that here there was no incongruity at all. It is rather remarkable, however, that the complete isomery between corolla and androecium, though duly recorded by the author, did not draw forth any comments from him. On the contrary, though there was now no longer any reason to doubt the near affinity between this genus and *Urophyllum*, a proposal was made by KOORDERS to retain MIQUEL's family *Metrocladaceae* in the form of a tribe *Metrocladeae*!

That the genus *Praravina* must be nearly allied to *Urophyllum* is seen at once when the common features of the three species known

since 1904 are compared with those of *Urophyllum*. It appears then that in both genera the inflorescences are axillary and dioecious, the ovary divided in several cells, the corolla hypocrateriform with bearded throat and valvate aestivation of the lobes, the style glabrous and divided in as many stigmata as there are cells in the ovary, the fruit fleshy, and the seeds small and numerous, and covered with a reddish-brown, alveolate testa.

A fourth species collected by HUB. WINKLER in the same part of Borneo where the type species had been discovered was described in 1910 by VALETON under the name *Pr. urophyloides*. The material consisted of fruiting branches only.

The fifth species, *Pr. Everettii*, described by MERRILL in 1915, was collected in the Philippine Island Negros. In 1923 it was transferred, however, by its author (Enum. Philipp. Flowering Plants III, p. 524) to the genus *Williamsia* MERR.

The original diagnosis of *Williamsia* had been published already in 1908 (Philipp. Journ. of Sc., Bot., III, p. 165). It was at that time a monotypic genus based on a Philippine plant described two years before by ELMER under the name *Urophyllum sablanense*. In the course of the next twenty years 14 more species have been referred to it. With one exception, *Williamsia borneensis* MERR., they were all Philippine plants. The genus was separated from *Urophyllum* because of its sessile or subsessile, solitary or fascicled flowers, and the presence of two tetramerous involucels. Another important character mentioned in the description, but not especially emphasized by its author, is the heteromery between calyx and corolla.

If the diagnosis of *Williamsia* is compared with an expurgated description of *Praravinia* the two appear to agree in almost every detail. It is true that the flowers of *Williamsia* have been described as hermaphrodite, whereas in *Praravinia*, as in all other genera belonging to the *Urophyllum* group, they are always unisexual, but a reinvestigation has shown that in this respect too there is full agreement between the two genera. The mistake in the description of *Williamsia*, however, is readily explained: as usual in the genera belonging to the *Urophyllum* group the staminodes of the female flower differ from the stamens of the male one merely in the sterility and in the slightly smaller size of the anthers, and the female flower is therefore, especially when no male ones are available for comparison, easily mistaken for a hermaphrodite one. In several of the subsequently described species the presence of unisexual flowers, moreover, has duly been noted. It can hardly be doubted, therefore, that *Williamsia* owes its origin to the faults in the description of *Praravinia*.

From what has been said above the conclusion may be drawn that *Praravinia* and *Urophyllum* are nearly allied. That ten species of *Praravinia* have originally been described under *Urophyllum* is a further proof that the similarity between the two genera is very great.

In another paper I have shown that one of the principal characters for the subdivision of the *Urophyllum* group is found in the nature of the hairs inserted in the corolla throat. These hairs are always unicellular and flat, but in the genus *Antherosteles* BREM. they are short and cuneate, and moreover not confined to the throat, but spread over the whole inner surface of the lobes; in *Urophyllum* WALL. itself and in its nearest allies, *Pleiocarpidia* K. SCH. and *Stichianthus* VAL., they are rather weak and at least in the upper part torulose or moniliform; and in the eight remaining genera they are smooth, glossy-white, stiff and pointed. *Praravinia*, of which now 49 species are known, is by far the largest genus of this group. Its nearest ally, probably, is the Bornean genus *Pravinaria* BREM. Calyx and corolla are in this genus isomerous, and the berries are white, whereas in *Praravinia* the number of calyx segments is always smaller than that of the corolla lobes, and the berries are apparently always yellow or brown. The monotypic Sumatran genus *Didymopogon* BREM. comes also very near to it, but here the corolla tube is provided inside with two rings of hairs, one in the throat and one at the base, and the anthers are dorsifixed and deeply sagittate: in *Praravinia* there is but one ring of hairs, and the anthers are subbasifixed. In *Maschalocorymbus* BREM. the inflorescence is corymbose, and provided with one involucel only, whereas the inflorescence of *Praravinia* is one- or few-flowered, surrounded by two involucels, and strongly contracted, the flowers being as a rule sessile or subsessile. In the four other genera the hairs in the corolla throat are inserted either on a ring or on a number of scales, and not as in *Praravinia* directly on the wall of the tube. *Maschalocorymbus* and *Praravinia* are in this group the genera with the widest distribution, *Maschalocorymbus* occurring in the Malay Peninsula, Sumatra, Java and Borneo, and *Praravinia* in Borneo, the Philippine Islands and Celebes; the six others are confined either to the Malay Peninsula and Sumatra, to Sumatra alone, or to Borneo.

Of the genus *Praravinia* so far 19 species have been found in the Philippine Islands, 23 species in Borneo, and 7 species in Celebes. The Philippine species have been dealt with in another paper (Journ. of the Arnold Arbor. XXI, pp. 41—47, 1940). As several of them have been based on fruiting material only, they are as yet but incompletely known and difficult to classify, but it seems to me that at least three different groups can be distinguished: 1°. a group of

small-leaved and small-flowered forms: *Pr. microphylla* (MERR.) BREM., *Pr. acuminata* (MERR.) BREM., *Pr. viridescens* (ELM.) BREM., *Pr. quadibracteolata* (MERR.) BREM., *Pr. luchanensis* (ELM.) BREM., *Pr. Everetii* MERR., *Pr. glabra* (MERR.) BREM., *Pr. mimica* (MERR.) BREM. and *Pr. stenophylla* (MERR.) BREM.; 2° a group of large-leaved and large-flowered forms: *Pr. mindanaensis* (ELM.) BREM., *Pr. Loheri* (MERR.) BREM., *Pr. sablanensis* (ELM.) BREM., *Pr. affinis* (MERR.) BREM., *Pr. panayensis* (MERR.) BREM., *Pr. longistipula* (MERR.) BREM., *Pr. negrosensis* (MERR.) BREM. and *Pr. multinervia* (MERR.) BREM.; and 3° two plants with very long calyx lobes: *Pr. triflora* (QUISUMB. et MERR.) BREM. and *Pr. pubescens* (QUISUMB. et MERR.) BREM. The first and the third group are apparently confined to the Philippine Islands, but between the large-leaved plants and some of the Bornean species there are many points of resemblance: the roughly pubescent *Pr. affinis*, *Pr. panayensis* and *Pr. longistipula* remind one of the Bornean *Pr. Creaghii* (RIDL.) BREM.; and *Pr. mindanaensis*, *Pr. Loheri* and *Pr. sablanensis*, with their verruculose shoots and petioles, look very much like the Bornean *Pr. nerifolia* BREM., *Pr. Havilandii* (RIDL.) BREM., *Pr. bullata* BREM. etc. An entirely satisfactory subdivision of the genus, however, can not yet be given, as several species are still imperfectly known.

The species collected in Celebes differ rather conspicuously from the others in the form of the calyx, which is provided with a long and narrowly urceolate instead of short and wide tube, and in the suberect instead of partly suberect and partly reflexed position of the hairs in the corolla throat, and one gets the impression that these differences are of more importance than those existing between the groups represented in Borneo and the Philippine Islands.

A general idea of the principal groups occurring in Borneo and Celebes may be obtained from the following key to the species. It is not a key of the artificial type, in which first of all the easily recognizable species are singled out, but as far as possible it intends to be a reflection of the natural affinities existing between the species.

Key to the Species of *Praravinia* occurring in Borneo and Celebes.

1. Calyx tube short and wide, or the calyx divided nearly to the base. — Species of Borneo (and the Philippine Islands) . . . 2
: Calyx tube long and narrowly urceolate. — Species of Celebes 24
2. Shoots, petioles and at least the primary nerves on the lower side of the leaves at first densely pubescent 3
: Shoots, petioles and leaves from the beginning glabrous or very sparsely pubescent; the shoots and petioles verruculose . . . 17

3. Pubescence dull, soft and patent; the hairs sometimes with recurved tips 4
 : Pubescence silky II
4. Ovary 12- to 16-locular 5
 : Ovary 8-locular 9
5. Flowers in fascicles on the old wood; the latter covered with a thick, deeply fissured, spongy cork. Leaves in herbarium material very dark. 1. *Pr. suberosa* (MERR.) BREM.
 : Female flowers solitary (the male ones perhaps also, but in three of the four species the latter are as yet unknown), in the axil of the lower leaves or of the upper leaf scars. Cork not thick and spongy. Leaves in herbarium material never very dark 6
6. Shoots terete. Calyx lobes cordate, 10—14 mm wide 2. *Pr. megistocalyx* BREM.
 : Shoots sexangular. Calyx lobes ovate-orbicular, ovate or oblong, and not more than 7.5 mm wide 7
7. Leaves with subacute base and about 21 pairs of nerves. Stipules 2.5—3 cm long. Flowers in the axil of the lower leaves. Calyx lobes ovate-orbicular, 6.5 mm long and 6.5—7.5 mm wide 5. *Pr. subtomentosa* BREM. ¹⁾
 : Leaves with rounded base and about 17 pairs of nerves. Stipules less than 2.5 cm long. Flowers on the defoliated part of the shoots. Calyx lobes ovate or oblong. 8
8. Leaves oblong or obovate. Calyx lobes oblong, 10 mm long 3. *Pr. urophyloides* VAL.
 : Leaves lanceolate or linear-oblong. Calyx lobes ovate, 6—7 mm long and 4.5—5 mm wide 4. *Pr. polymera* BREM.
9. Shoots subterete. Calyx lobes narrowly triangular, 6 mm long; on the fruit recurved 8. *Pr. mollis* BREM.
 : Shoots obtusely quadrangular. Calyx lobes ovate or ovate-orbicular, less than 6 mm long; on the fruit not recurved 10
10. Leaves oblong or elliptic-oblong, 12—19 cm long; stipules 1.5 cm long. Calyx tube about as long as the lobes 6. *Pr. borneensis* (MERR.) BREM. ²⁾

¹⁾ As the ovary is still unknown, the position of this species is uncertain. It has been referred here on account of its resemblance to the species 3 and 4, but it shows also points of resemblance with 6 and 7, v. infra.

²⁾ Compare also 5. *Pr. subtomentosa* BREM., which has sexangular instead of quadrangular shoots, solitary instead of fascicled male flowers, and much larger calyx lobes.

- : Leaves linear-oblong, 21—35 cm long; stipules 3 cm long. Calyx tube much longer than the lobes . 7. *Pr. Creaghii* (RIDL.) BREM.
11. Leaves ovate-elliptic; nerves towards the top of the leaf far apart and below very prominent. Male flowers, apart from the central one, in decussate triads in the axil of the involucels. Calyx lobes valvate 9. *Pr. oresitropha* BREM.
- : Leaves narrower: linear-oblong, linear-lanceolate or linear-ob lanceolate; nerves towards the top of the leaf not much further apart than elsewhere and below not very prominent. Male flowers sometimes fascicled, but the fascicles at the most with 7 flowers. Calyx lobes imbricate 12
12. Corolla of the male flowers 10- to 12-merous, of the female ones 8- to 10-merous. Male flowers in groups of 3 to 5. Calyx lobes suborbicular and 8—9 mm wide 10. *Pr. densiflora* KORTH.
- : Corolla of both male and female flowers 6- to 8-merous. Male flowers either solitary or in groups of three. Calyx lobes either suborbicular, but then much smaller than in the preceding species, or narrower 13
13. Corolla 8-merous (the lateral flowers of the male triads sometimes with 6-merous corollas) 14
- : Corolla 7- or 6-merous 15
14. Young parts and flowers grey-silky. Leaves oblong or oblanceolate 11. *Pr. sericotricha* BREM.
- : Young parts and flowers brownish-silky. Leaves linear-oblong 12. *Pr. chalcotricha* BREM.
15. Calyx lobes linear-lanceolate, 8—9 mm long and 2.2—3 mm wide. Young leaves and flowers brownish-silky 13. *Pr. sarawacensis* BREM.
- : Calyx lobes ovate. Young leaves and flowers grey-silky 16
16. Leaves in herbarium material on the upper side pallid; the young ones dark brown. Stipules 7—10 mm wide. Calyx lobes 7—8 mm long. Ovary 5- or 6-celled 14. *Pr. Hallierii* BREM.
- : Leaves in herbarium material on the upper side dark brown or olivaceous; the young ones yellow. Stipules 4—5 mm wide. Calyx lobes 4 mm long. Ovary 7- or 8-celled 15. *Pr. hexamera* BREM.
17. Male flowers fascicled. Calyx not verruculose 18
- : Male flowers solitary, i.e. the inflorescences reduced to a single flower; sometimes, however, a group of one-flowered inflor-

- escences in the axil of the same leaf (each flower with two involucels!). Calyx verruculose 19
18. Leaves linear-oblong, 20—22.5 cm long, going out in a long tail and provided with about 15 nerve pairs, on the lower side sprinkled with long hairs. Stipules 2.5 cm long 16. *Pr. neriifolia* BREM.
 : Leaves oblong, 15—18 cm long, acuminate and provided with 10—12 nerve pairs, entirely glabrous. Stipules 1.5 cm long 17. *Pr. Havilandii* (RIDL.) BREM.
19. Leaves elliptic; the nerves on the lower side very prominent. Corolla lobes inside villous 20
 : Leaves narrower: oblong, linear-oblong or linear; the nerves on the lower side not very prominent. Corolla lobes inside glabrous 21
20. Leaves rounded at the base, but in the immediate vicinity of the petiole suddenly contracted; midrib on the lower side softly pubescent; nerve pairs usually 17 or 18. Stipules outside softly pubescent, 3—3.5 cm long 18. *Pr. bullata* BREM.
 : Leaves subacute at the base; completely glabrescent; nerve pairs 12—13. Stipules outside glabrescent, 2.2—2.4 cm long 19. *Pr. coriacea* BREM.
21. Leaves oblong, usually very large: up to 37 cm long and 8 cm wide, in herbarium material light brown. Stipules 11 mm long, outside densely pubescent 20. *Pr. parviflora* BREM.
 : Leaves linear-oblong, oblanceolate or linear, never so large as in the preceding species, and in herbarium material always pallid. Stipules larger 22
22. Leaves linear, 18.5—23.5 cm long and 2.5—3.2 cm wide. Stipules 22 mm long. — Corolla 6-merous 21. *Pr. salicifolia* BREM.
 : Leaves linear-oblong. Stipules not more than 16 mm long 23
23. Calyx lobes rotundate, 2 mm long. Berry 8-locular. — Corolla 8-merous 22. *Pr. verruculosa* BREM.
 : Calyx lobes broadly triangular, 0.7 mm long. Berry 5-locular. — Corolla unknown 23. *Pr. gracilis* BREM.
24. Leaves caudate-acuminate. Corolla 9- or 10-merous, not very long and narrow 25
 : Leaves ending in a long and narrow tail. Corolla 6- to 8-merous, very long and narrow 27
25. Stipules 20—30 mm long, obtuse. Scales of the involucels erect. Calyx shortly lobed 26

- : Stipules 13 mm long, acute. Scales of the involucels spreading.
Calyx repando-dentate 26. *Pr. celebica* BREM.
26. Leaves elliptic or elliptic-oblong; nerve pairs usually 14. Stipules 24—30 mm long and 7—10 mm wide. Upper involucel with a 5 mm high tube and 4 mm long lobes. Calyx tube 10 mm long; the lower half swollen; the upper half cylindrical. Corolla lobes 5 mm long 24. *Pr. Minahassae* Kds.
- : Leaves linear-oblong or oblanceolate; nerve pairs usually 9. Stipules 23 mm long and 5 mm wide. Upper involucel with a 2 mm high tube and 1.5 mm long lobes. Calyx tube obovoid, 8 mm long. Corolla lobes 7 mm long 25. *Pr. loconensis* BREM.
27. Shoots 7—9 mm diam. Leaves 28—37 cm long and provided with 14—15 nerve pairs. Stipules 3.5 cm long and 14 mm wide 29. *Pr. robusta* BREM.
- : Shoots less than 5 mm diam. Leaves less than 20 cm long and provided with less than 14 nerve pairs. Stipules less than 2.5 cm long and 3.5 mm wide 28
28. Flowers on the old wood. Leaves with about 7 nerve pairs 28. *Pr. cauliflora* BREM.
- : Flowers on the green shoots. Leaves with more than 7 nerve pairs 29
29. Shoots and petioles glabrous. Petiole 15—20 mm long. Blade lanceolate, thin; the midrib not canaliculate 27. *Pr. montana* BREM.
- : Shoots and petioles at first densely, afterwards sparsely pubescent. Petiole 6—10 mm long. Blade linear-lanceolate, subcoriaceous; the midrib distinctly canaliculate 30. *Pr. Teysmannii* Kds.

Of most of the species either the male or the female plant is still wanting, of some fruiting branches only have been collected, and in several instances no fully developed flowers are available. That under these circumstances an entirely satisfactory subdivision of the genus can not be given, is obvious: even where the groups seem to be quite natural, a more secure foundation would certainly be welcome. The Celebes species, for instance, have been separated from the others on account of the long and narrow calyx tube, but it is quite possible that the corolla too would offer good diagnostic characters: where full-grown corollas are known, the tube appears to be much narrower than in any of their Bornean or Philippine

allies; and the hairs in the throat are moreover all suberect, and not partly reflexed as in those species. In the Bornean species, where the nature of the indumentum and the presence or absence of wartlets on the shoots and petioles, the number of ovary cells, the shape of the calyx and the number of corolla lobes are considered as the most important features, similar difficulties are experienced: where the ovary or the corolla are not available, a decision is not always easy.

According to the nature of the indumentum and the presence or absence of wartlets on shoots and petioles the Bornean species have been divided in three groups. In group one (species 1—8) there appears to be a quite remarkable variability in the number of ovary cells: in one set of species it is double or nearly double that of the corolla lobes, whereas in the others the two agree. One would be inclined to put the species with the double number of ovary cells in a group of their own, but in their other characters they are so similar to the species with the normal number that a plant like *Pr. subtomentosa* BREM., of which the ovary is unknown, can not be located with certainty. The importance of this character, therefore, should not be overrated, and the species kept in one group. Group three shows a striking resemblance to the group of the large-leaved Philippine species, and when they become better known, these groups may prove identical.

Enumeratio descriptiva specierum borneënsium et celebicarum.

PRARAVINIA KORTH. in TEMMINCK, Verhand. Nat. Gesch. Ned. Overz. Bezitt., Bot., p. 189, tab. 41 (1839—1842); HASSK. in Flora XXXI, p. 580 (1848), ubi perperam *Paravinia* scripta; KORTH. in Ned. Kruidk. Arch. II (2), p. 196 (1851); MIQ., Fl. Ind. Bat. II, p. 225 (1857); id. in Ann. Mus. Bot. Lugd.-Bat. IV, p. 136 (1868); BENTH. et HOOK.F., Genera Plantarum II (1), p. 75 (1873); BAILLON, Hist. d. Pl. VII, p. 459 (1880); BOERL., Handl. Fl. Ned. Ind. II (1), p. 65 (1891); K. SCH. in ENGL. u. PRANTL, Natürl. Pflanzenfam. IV (4), p. 70 (1891); KOORDERS in Nat. Tijdschr. Ned. Ind. LXIII, p. 73 (1904); LEMÉE, Dict. Pl. Phan. V, p. 537 (1934); — *Williamsia* MERR. in Philipp. Journ. of Sc., Bot., III, p. 165 (1908); LEMÉE, Dict. Pl. Phan. VI, p. 932 (1935). — Typus: *Pr. densiflora* KORTH., cf. infra: speciem decimam.

Genus *Rubiacearum* inflorescentiis axillaribus dioecis, ovario pluriloculari, placentis quoque loculo duabus parte centripetaliter dissepimentorum affixis, corolla hypocrateiformi brevituba, fauce barbata, aestivatione valvata, stylo glabro, stigmatibus patentibus, fructu

baccato, seminibus ovoideis permultis, testa rubro-brunnea alveolata vestitis affinitatem cum genere *Urophyllo* WALL. et generibus ei proximis detegens, pilis corollae fauce insertis rigidis et acutis, haudquaquam constrictis et ab *Urophyllo* ipso, *Pleiocarpidia* K. SCH., *Stichiantho* VAL. et ab *Antherostele* BREM. recedens et ad genera *Pravinariam* BREM., *Didymopogonem* BREM., *Maschalocorymbum* BREM., *Raphiduram* BREM., *Leucolophum* BREM., *Lepidostoma* BREM., *Crobylanthem* BREM. accedens, a *Pravinaria* calyce et corolla heteromeris, a *Didymopogone* absentia annuli pilorum basi tubi inserti, a *Maschalocorymbo* inflorescentia semper valde contracta et involucellis duobus circumdata, a generibus aliis pilis fauce insertis neque annulo neque squamis elatis diversum.

Arbores parvae, parce brachiatae, dioeciae. *Rami* novelli plerumque complanati, interdum quadrangulares, sexangulares vel subteretes, sed numquam profunde sulcati. *Folia* opposita et aequalia, petiolata; petiolus canaliculatus; lamina acuminata vel caudata, costa plerumque canaliculata, nervis patentibus et plerumque subaequidistantibus. *Stipulae* interpetiolares, simplices, plerumque longae et angustae, intus glabrae vel pilosae, axilla semper sericeo-villosae, plerumque mox deciduae et cicatrices transverse ellipticas relinquentes. *Inflorescentiae* axillares, sessiles vel subsessiles, interdum serialiter auctae, involucellis tetrumeris duobus, intus ad basin sericeo-villosis cinctae, e flore terminali et floribus vel florum triadibus in axilla involucelli superioris vel involucellorum amborum decussatis compositae vel ad florem terminalem redactae, floribus sessilibus vel subsessilibus, rare distincte pedicellatis, plerumque ebracteolatis. *Flores* mediocres vel parvi. *Ovarium* 5- usque ad 16- loculare, i.e. loculis plerumque fere tantis quanta corollae segmenta, interdum eis bis numerosioribus; placentae quoque loculae duae, parte centripetali septorum insertae, subpellatae, lamina plicata ovulis numerosis obiectae; ovarium floris masculi in stipitem brevem redactum. *Calyx* urceolatus, cupulatus vel campanulatus, dentatus, lobatus vel partitus, plerumque 4-merus, interdum 3-, 5- vel 6-merus, segmentis semper paucioribus quam corollae lobis tamen; tubus in flore masculo semper altior quam in flore femineo. *Corolla* albida, viridula, luteola vel dilute rosea, hypocrateriformis, tubo cylindrico, ad faucem interdum dilatato, plerumque lobis subaequilongo, fauce pilis unicellulariis appennatis rigidis, haudquaquam constrictis, acutis albo-barbata, lobis crassiusculis valvatis 5—12. *Stamina* fauce vel paulum infra faucem inserta, filamentis brevibus glabris, tubo usque ad basin decurrentibus, antheris subbasifixis, introrsis, connectivo dorso amplificato et in apiculam producto, e barba subexsertis; staminodia floris feminei staminibus similiora, antheris sterilibus

minoribus tamen. *Discus* semiglobosus, conicus vel annularis, glaber vel subglaber, subcerebriformis, sulcis principalibus tantis quanta filamenta. *Stylus* crassiusculus glaber; stigmata stylo subaequilonga, erecto-patentia, longe fimbriata, breviter exserta, ovarii loculis numero aequalia; stylodium floris masculi parvum, in lobos aliquos, puberulos vel brevissime fimbriatos divisum. *Fructus* bacca globosa, haud rare sulcata, calyce coronata, maturitate lutea vel luteo-brunnea, 5- usque ad 16-lokulare, placentis nunc ad medium septum migratis, lamina plicatissima. *Semina* numerosa ovoidea, testa crustacea rubro-brunnea alveolata, endospermo oleagineo, embryone parvo et recto.

Habitat speciebus adhuc notis 49 silvas Insularum Philippinen-sium, Borneënses, Celebicas.

A. Species Borneënses. — Calyx nunc tubo brevi et ampio, margine dentato vel lobato, nunc tubo brevissimo et lobis plerumque magnis; pili fauce corollae inserti pro parte reflexi. — Species 1—23.

a. Rami novelli, petioli, costa nervique foliorum novellorum subtus pubescens molli, opaca, e pilis patentibus, apice interdum recurvatis composita vestiti. — Species 1—8.

1. *Praravinia suberosa* (MERR.) BREM. n. comb.; *Urophyllum suberosum* MERR. in Journ. Asiat. Soc., Mal. Branch I, p. 40 (1923); id. in Univ. Cal. Publ., Bot. XV, p. 281 (1929).

Arbor parva, circ. 3 m alta, trunco et ramis veterioribus subero spongioso, profunde fisso vestitis. Rami novelli complanati, pilis olivaceis dense et molliter pubescentes, deinde teretes et subero griseo nitidulo, primum levi obtecti. Folia petiolo dense et molliter pubescente 2.5 cm longo; lamina oblonga vel linear-lanceolata 22—35 cm longa et 5—10.5 cm lata, caudata, basi foliorum minorum et angustiorum acuta, foliorum majorum et latiorum rotundata, subcoriacea, sicc. saturate olivacea vel subnigra, supra costa excepta glabra, subtus costa nervisque dense et molliter pubescens et inter nervos sparsius pubescens, nervis utroque latere costae 20—25 subtus prominentibus, venulis dense reticulatis subtus prominulis. Stipulae anguste ovato-lanceolatae vel linear-oblongae, 2.7—4.5 cm longae et 0.7—1.4 cm latae, acutae, conduplicatae, extus intusque pubescentes. Inflorescentiae e trunco et ramis veterioribus orientes, masculae et femineae 5-florae, floribus lateralibus a squamis foliaribus involucrorum suffultis, bi-bracteolatis. Involucella dense et molliter pubescentia; superius inferiore paulo majus, lobis ovatis 8—10 mm longis. Bracteolae segmentis involucrorum subaequilon-gae, sed paulo angustiores. Flores plerumque calyce 5-mero quin-

cunxiali, flores laterales fasciculorum masculorum tamen calyce 4-mero imbricato muniti. *Flos masculus* imperfecte notus. *Calyx* 4- vel 5-merus. *Corolla* 5- vel 6-mera. *Flos femineus*: *Ovarium* loculis 12—14. *Calyx* 5-merus, tubo brevi, lobis ovatis obtusis 10 mm longis et 12 mm latis. *Corolla* 6- vel 7-mera, extus adpresso pubescens, tubo 10—12 mm longo et 8—10 mm diam., lobis intus glabris 9 mm longis. *Staminodia* nondum nota. *Stylus* 5 mm longus; stigmata 12—14 stylo fere bis longiora. *Bacca* 2 cm diam., calycis lobis patentibus coronata, loculis 12—14.

Hab. terrae Borneensis partem septentrionalem, ubi ad altitudines humiliores vigeat.

British North Borneo. Batu Liman near Sandahan, RAMOS 1472 ♀ A, K (exempla typi); Bettutan near Sandahan, KLOSS 19040 K (ster.); Sandahan, ELMER 20173 ♂ L, U, A, NY; Labuk and Sugut Distr., AGAMA 663 ♀ NY; Tawao, ELMER 20787 fr. L, U, A, NY.

Exempla examinata omnia valde incompleta; descriptio corollae pro parte e descriptione originali excerpta; numerus corollae laborum in flore femineo haud certus.

A speciebus aliis stigmatibus et ovarii loculis 12 vel pluribus munitis, subero spongioso crasso, foliis siccitate saturate olivaceis vel subnigris, inflorescentiis e trunko et ramis veterioribus orientibus, calyce plerumque 5-mero faciliter cognoscenda.

2. **Praravinia megistocalyx** BREM. n. spec.; typus: ENDERT 3678 in herbario horti bogoriensis.

Arbor circ. 8 m alta. *Rami* novelli primum complanati, deinde teretes, primum dense et molliter pubescentes; veteriores cortice griseo-brunneo opaco vestiti. *Folia* petiolo primum dense, deinde sparse pubescente 8—12 mm longo; lamina anguste oblonga 16—22 cm longa et 4.0—5.3 cm lata, caudato-acuminata, basi acuta, herbacea, opaca, sicc. dilute brunnea, supra primum costa et margine dense et molliter pubescens, deinde glabrescens, subtus costa nervisque dense et molliter pubescens et inter nervos primum satis dense, deinde sparsius pubescens, nervis utroque latere costae circ. 15 subtus prominentibus, venuulis laxe reticulatis subtus prominulis. *Stipulae* lineares, 18—20 mm longae et 5 mm latae, subacute, conduplicatae et carinatae, extus dense et molliter pubescentes, intus basin versus pubescentes. *Inflorescentiae* parte defoliata ramorum insertae, masculae ignotae, femineae ad florem singulum pedactae. *Involucella* dense et molliter pubescentia; inferius cupula 2 mm alta, lobis ovatis acutis 3.5 mm longis; superiorius cupula aequali, lobis cordatis acutis lateralibus 7 mm, medianis 5 mm longis. *Flos masculus* ignotus. *Flos femineus*: *Ovarium* dense et molliter pubes-

cens, 7 mm altum, loculis 13—15. *Calyx* 4-merus, extus dense et molliter pubescens, tubo subnullo; lobis cordatis acuminatis 11—12 mm longis et 10—14 mm latis, carinatis, intus ad basin pubescentibus, apicem versus glabrescentibus. *Corolla* 8-mera, matura nondum visa et tubi longitudo inde ignota, tubo extus glabro; lobis 8 mm longis et basi 1.8 mm latis, extus sericeis, intus glabris. *Staminodia* antheris acumine 0.5 mm longo comprehenso 2.5 mm longis. *Stylus* in stigmata 13—15, longe fimbriata fissus. *Bacca* ignota.

Hab. terrae Borneensis partem orientalem, ubi ad altitudinem mediocrem reperta est.

Borneo. Southern and Eastern Division; West Kutei, near the River Kemul, alt. 1100 m, ENDERT 3678 ♀ BZ (typus).

Inter species ad seriem hanc pertinentes floribus femineis solitariis munitas calycis lobis cordatis et magnis noscenda.

3. *Praravinia urophyilloides* VAL. in ENGL. Bot. Jahrb. XLIV, p. 556 (1910); MERR. in Journ. Asiat. Soc., Mal. Branch, Special Number 1921, p. 581; non MERR. in Mitt. Inst. allg. Bot. Hamburg VII, p. 290 (1937) quae est *Pr. Hallierii* BREM.

Arbor parva, 4—5 m alta. *Rami* novelli paulum complanati, pilis recurvatis subtomentosi, sexangulares; veteriores cortice griseo opaco vestiti. *Folia* petiolo subtomentoso 8—12 mm longo; lamina oblonga vel obovata 12—14.5 cm longa et 4.5—5 cm lata, caudato-acuminata, basi rotundata, subcoriacea, opaca, sicc. supra pallida et subtus viridis, supra primum costa et margine subtomentosa, deinde glabrescens, subtus costa nervisque subtomentosa et inter nervos satis dense pubescens, nervis utroque latere costae circ. 17 subtus prominentibus, venulis subtus prominulis. *Stipulae* oblongae 18 mm longae et 6 mm latae, acutae, carinatae, extus intusque subtomentosae. *Inflorescentiae* masculae ignotae, femineae ad florem singulum redactae. *Involucella* extus intusque subtomentosa; inferius cupula 0.5 mm alta, lobis triangularibus 1.5 mm longis; superiorius cupula 2 mm alta, lobis lateralibus triangularibus, medianis ovatis, omnibus 4.5 mm longis. *Flores* ignoti. *Bacca* subtomentosa, sulcis 16 impressa, calycis lobis 4 oblongis acutis 10 mm longis extus subtomentosis coronata, loculis 16.

Hab. terrae Borneensis partem austrialem, ubi regione calidiore reperta est.

Borneo. Southern and Eastern Division; District Kapuas-Barito; Sub-district Muara Tewe, between Muara Benangin and Lumo Sibak, HUB. WINKLER 3184 fr. B (typus), L (dupl. typi), fr. Aug.

Calyx a VALETON 5-merus dictus 4-merus est; bacca non 17-locularis, sed ut supra descripta 16-locularis.

Inter species ad seriem hanc pertinentes ramis novellis sexangularibus ad species duas sequentes accedens, foliis oblongis vel obovatis, calycis lobis oblongis ab eis recedens.

4. **Praravinia polymera** BREM. n. spec.; typus: ENDERT 2202 in herbario horti bogoriensis.

Arbor parva, circ. 5 m alta. *Rami* novelli paulum complanati, pilis recurvatis subtomentosi, sexangulares; veteriores cortice griseo-brunneo opaco vestiti. *Folia* petiolo subtomentoso 10—13 mm longo; lamina linearis-oblonga vel linearis-lanceolata 13—23 cm longa et 3.2—5.5 cm lata, caudato-acuminata, basi rotundata, subcoriacea, opaca, sicc. supra pallida et subtus dilute brunnea, supra primum costa et margine subtomentosa, deinde glabrescens, subtus costa nervisque subtomentosa et inter nervos primum densius, deinde sparse pubescens, nervis utroque latere costae 15—19 subtus prominentibus, venuis dense reticulatis subtus prominulis. *Stipulae* lineares, 15—23 mm longae et 4—6 mm latae, acutae, carinatae, extus intusque subtomentosae. *Inflorescentiae* parte commodum defoliata ramorum insertae, masculae ignotae, feminineae ad florem singulum redactae. Involucella tria subtomentosa; inferius minimum; medium cupula 1.5 mm alta, lobis triangularibus 2—2.5 mm longis; superius cupula 3.5 mm alta, lobis ovatis acutis 2.5 mm longis. *Flos masculus* ignotus. *Flos feminineus*: *Ovarium* subtomentosum loculis 13—16. *Calyx* 4-mersus, extus intusque subtomentosus, tubo subnullo; lobis ovatis acutis 6—7 mm longis et 4.5—5 mm latis. *Corolla* ignota. *Bacca* tomentosa, sulcis 13—16 impressa, loculis 13—16.

Hab. terrae Borneensis partem orientalem, ubi regione calidiore reperta est.

Borneo. Southern and Eastern Division; West Kutei, Batu Bong, alt. 50 m, ENDERT 2202 ♀ BZ (typus), fl. Jul.

A specie sequenti foliis basi acutis, floribus in axillis cicatricum insertis, calycis lobis angustioribus distingueda.

5. **Praravinia subtomentosa** BREM. n. spec.; typus: AMDJAH 466 in herbario horti bogoriensis.

Habitus ignotus. *Rami* novelli pilis recurvatis subtomentosi, sexangulares; veteriores indumentum diu retinentes. *Folia* petiolo robustiore subtomentoso 8—12 mm longo; lamina linearis-oblonga 14—18 cm longa et 3.7—4.7 cm lata, basi subacuta, apice caudata, firme subcoriacea, opaca, sicc. haud conspicue discolorata, supra costa et margine primum dense pilosis exceptis glaberrima, subtus costa nervisque subtomentosa et inter nervos densius pubescens, nervis utroque latere costae circ. 21 subtus prominentibus, venuis

densius reticulatis subtus prominulis. *Stipulae* lineares, 2.5—3 cm longae et 5—7 mm latae, acutae, carinatae, extus intusque subtomentosae. *Inflorescentiae* axillis foliorum insertae, ad florem singulum redactae, feminine ignotae. Involucella subtomentosa; inferius cupula 1.5 mm alta, lobis triangularibus 1.5—2 mm longis et 2—2.5 mm latis; superiorius cupula aequali, lobis ovato-orbicularibus 5 mm longis et 4.5 mm latis. *Flos masculus*: *Calyx* 4-merus, campanulatus, extus intusque subtomentosus, tubo 3 mm alto; lobis ovato-orbicularibus subacutis 6.5 mm longis et 6.5—7.5 mm latis. *Corolla* 8-mera, extus subtomentosa, tubo nondum mato 4.5 mm longo; lobis 5.3 mm longis et 2 mm latis, intus glabris. *Stamina* antheris acumine 0.7 mm longo comprehenso 3.5 mm longis. *Styloidium* 2 mm longum in ramulos 8 brevissime fimbriatos exiens. *Flos feminineus* et *bacca* ignoti.

Hab. terrae Borneensis partem septentrionalem ad altitudinem humiliorem.

Borneo. Southern and Eastern Division; Tidung, B. Ulu Sebuku, AMDJAH 466 ♂ BZ (typus), fl. Sept.

Positio species huius absentia floris feminine et baccae haud certe determinanda; ramis sexangularibus et stipulis intus pubescentibus ad species duas praecedentes accedens, foliis basi subacutis, nervis paulo numerosioribus, stipulis longioribus, floribus parte nondum defoliata ramorum insertis, calycis lobis ovato-orbicularibus ab eis distinguenda; floribus parte nondum defoliata ramorum insertis ad species duas sequentes accedens, sed ramis sexangularibus, non quadrangularibus, stipulis intus pubescentibus, floribus masculis solitariis, non fasciculatis, calycis lobis majoribus ab eis recedens.

6. *Praravinia borneensis* (MERR.) BREM. n. comb.; *Williamsia borneensis* MERR. in Univ. Calif. Publ., Bot. XV, p. 282 (1929) p.p.

Arbor parva, circ. 2 m alta. *Rami* novelli subquadrangulares, subtomentosi et indumentum diu retinentes; veteriores cortice luteo-brunneo glabro vestiti. *Folia* petiolo robustiore subtomentoso 5—9 mm longo; lamina oblanceolata, oblonga vel obovata, 12—19 cm longa et 3.3—8.5 cm lata, plerumque tamen 14—16 cm longa et 4.5—5.5 cm lata, caudata, basi acuta vel cuneata, opaca, sicc. haud conspicue discolorata, supra costa et margine dense pilosis exceptis glaberima, subtus costa nervisque subtomentosa et inter nervos subglabra, nervis utroque latere costae 14—16 subtus prominentibus, venulis laxe reticulatis subtus prominulis. *Stipulae* lineares, 15 mm longae et 2.5—3.5 mm latae, subobtusae, haud distincte conduplicatae, extus dense et molliter pubescentes, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae,

masculae 3- vel 5-florae, femineae ad florem singulum redactae: Involucella subtomentosa; inferius 1.5—2 mm altum; superius 3—3.5 mm altum; flores masculi laterales bi-bracteolati. *Flos masculus*: Calyx 4-merus, campanulatus, extus subtomentosus, intus sericeo-villosus, tubo 2.5 mm alto; lobis ovato-orbicularibus 2.5 mm longis et 3 mm latis. Corolla 8-mera, extus fere tota subtomentosa, tubo basin versus tamen glabrescente, 6 mm longo; lobis 7 mm longis et 1.2 mm latis. Stamina antheris acumine 0.5 mm longo comprehenso 2.5 mm longis. Styloidium fere ad basin in ramulos 4 divisum, 1.8 mm longum. *Flos femineus*: Ovarium subtomentosum, 8-loculare. Calyx tubo brevi, lobis ovatis 3—4 mm longis latisque, ceterum ut floris masculi. Corolla ut floris masculi. Staminodia 8. Stylus stigmatibus 8. Bacca subtomentosa, 8-locularis.

Hab. terrae Borneensis partem septentrionalem, ubi partibus calidioribus crescit.

British North Borneo; Tawao, ELMER 20463 ♂ NY (typus), L, U, A (exempla typi), id. 20464 ster. NY; Marutai, MAIDIN 2331 fr. K (vern. name: „medang perampuan”); Sipaku, KAMIS 4282 ♂ K, fl. Jun.; Kalabakan Watershed, alt. 8 m, VILLAMIL 239 fr. K, NY, A; Marutai Watershed, alt. 3 m, id. 378 ♂ NY; Sandahan, SALES 3857 fr. A. Dutch Borneo; Southern and Eastern Division; Tidung, G. Pentjangan, AMDJAH 330 fr. BZ; G. Sedalis, id. 258 fr. BZ; B. Sungai Tulit, id. 631 fr. BZ; G. Sudjan, id. 778 fr. BZ; G. Pemblian-gan, id. 830 fr. BZ.

Etsi species haec in regionibus Tawaoensi et Tidungensi aperte haud rara, adhuc nihilominus imperfecte nota est; flores in specimini-bus examinatis plerumque male conservati vel nulli. Ovario 8-locu-lari ad speciem sequentem accedit, foliis minoribus, pro rata latiori-bus, calycis lobis majoribus ab ea tamen distincta. Quo modo a *Pr. subtomentosa* distinguenda, cuius ovarium adhuc ignotum, supra jam explicatum est.

7. *Pr. Creaghii* (RIDL.) BREM. n. comb.; *Urophyllum Creaghii* RIDL. in Journ. of Bot. LXX, p. 193 (1932); — *Williamsia borneensis* MERR. in Univ. Cal. Publ., Bot. XV, p. 282 (1929) p.p., haud quoad typum.

Arbor parva, circ. 3 m alta. *Rami* novelli subtomentosi, obtuse quadrangulares, sulcati, 4—5 mm diam., deinde glabrescentes. *Folia* petiolo primum dense et molliter pubescente, deinde sparse pubes-cente, 12—20 mm longo, crassiusculo; lamina anguste oblonga 21—35 cm longa et 4.8—7.5 cm lata, caudata, basi acuta, subcoriacea, supra nitidula, sicc. pallida, supra costa dense pilosa excepta glabra, subtus costa nervisque molliter pubescens, inter nervos sparse pu-

bescens, nervis utroque latere costae circ. 18 subtus prominentibus, venuis laxius reticulatis subtus prominulis. *Stipulae* lineares, 30 mm longae et 5—7 mm latae, subobtusae, conduplicatae, extus molliter pubescentes, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae, masculae 3- vel 5-florae; femineae ad florem singulum redactae. Involucella subtomentosa, inferius dorsiventraliter compressum diametro majore 7 mm, diametro minore 3.5 mm; superius haud compressum 8 mm diam. *Flos masculus*: *Calyx* 4-merus, late campanulatus, extus pubescens, intus sericeo-villosus 7 mm diam., 4.5 mm altus, breviter lobatus; lobis late ovatis. *Corolla* 8-mera tubo extus glabro, nondum maturo 4 mm longo et 4.5 mm diam.; lobis extus pubescentibus, intus glabris, 5 mm longis et 1.8 mm latis. *Stamina* antheris brevissime acuminatis 2 mm longis. *Styloodium* fere ad basin in ramulos paucos divisum 1 mm longum. *Flos femineus*: *Ovarium* subtomentosum 8-loculare. *Calyx* ut floris masculi, tubo breviore tamen. Cetera ignota. *Bacca* globosa, pubescent et verruculosa, 12 mm diam., 8-locularis.

Hab. terrae Borneensis partem septentrionalem, ubi regionibus calidioribus crescit.

British North Borneo; Sandahan, ELMER 20140 ♀ L, U, A, NY; ARSAT 683 ♀ A, NY; RAMOS ♀ 1199 A; Kahili, SALES 1483 ♀ K; s.l. CREAGH s.n. ♂ K (typus). Dutch Borneo; Southern and Eastern Division; Bulungan, nr River Sadjan, RUTTEN 104 ♂ U.

Ovario 8-loculari ad speciem praecedentem et ad speciem sequentem accedens, a *Pr. borneensi* foliis majoribus et praesertim longioribus, stipulis majoribus, calyce brevius lobato, a *Pr. mollis* foliis multo majoribus, calycis lobis haud triangularibus et multo brevioribus, fructu haud recurvatis recedens.

8. *Praravinia mollis* BREM. n. spec.; typus: EVANGELISTA 963 in herbario Arboreti Arnoldiani.

Arbor parva, 1.8—15 m alta. *Rami* novelli subteretes, subtomentosi, deinde glabrescentes et cortice griseo-brunneo squamoso vestiti. *Folia* petiolo robustiore subtomentoso 5—9 mm longo; lamina anguste obovata vel oblonga 9—19 cm longa et 3.5—7.5 cm lata, caudata, basi subacuta, tenuiter subcoriacea, sicc. dilute viridi-brunnea, supra costa dense pilosa excepta glaberrima, subtus costa nervisque subtomentosa, inter nervos primum dense, deinde sparse pubescens, nervis utroque latere costae 12—15 subtus prominentibus, venuis laxius reticulatis subtus prominulis. *Stipulae* lineares, 15—20 mm longae et 2—2.5 mm latae, acutae, conduplicatae, extus dense pubescentes, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae, masculae et femineae ad florem singulum redactae.

Involucella subtomentosa; inferius cupula 1 mm alta, lobis lateralibus 1 mm longis et 1.5 mm latis, medianis 1.7 mm longis et 1.2 mm latis; superius cupula 2 mm alta, lobis lateralibus 1 mm longis et 3 mm latis, medianis 1.8 mm longis latisque. *Flos masculus*: *Calyx* 4-merus, campanulatus, extus subtomentosus, intus totus sericeus, tubo 2 mm, alto; lobis triangularibus acutis 6 mm longis, lateralibus 2.5 mm, medianis 1.7 mm latis. *Corolla* 8-mera, tubo extus glabro 6 mm longo, fauce dilatato; lobis extus apicem versus dense villosis 3.8 mm longis et 2 mm latis. *Stamina* antheris acumine 0.5 mm longo comprehenso 2.5 mm longis. *Styloodium* 1.5 mm longum in ramulos 8 brevissime fimbriatos fissum. *Flos femineus*: *Ovarium* globosum 3 mm diam., subvillosum, 8-loculare. *Calyx* ut floris masculi, tubo breviore tamen. *Corolla* ut floris masculi. *Staminodia* antheris 1.4 mm longis. *Stylus* stigmatibus 8. *Bacca* subtomentosa 10 mm diam., calycis lobis recurvatis coronata, 8-locularis.

Hab. terrae Borneensis partem septentrionalem, ubi regione calidiore crescit.

British North Borneo; Kinabatangan, EVANGELISTA 963 ♂ A (typus), NY (dupl. typi), fl. Aug.; id. 950 ♀ A, NY; Bettotan near Sandahan, KLOSS 18746 ♀ K (co-typus), NY, fl. Jul.; VALERA 4316 ♀ K, fr. Jan. (vern. name: silaw).

A speciebus duabus praecedentibus floribus masculis solitariis et calycis lobis anguste triangularibus faciliter distinguenda, floribus masculis solitariis forsitan ad *Pr. subtomentosam* accedens.

b. Rami novelli, petioli, costa nervique foliorum novellorum subtus sericei. — Species 9—15.

9. *Praravinia oresitropha* BREM. n. spec.; typus: J. et M. S. CLEMENS 51105 in herbario lugdunensi.

Arbor parva. *Rami* novelli complanati, pilis olivaceis sericei, deinde obtuse quadrangulares et late sulcati, glabrescentes. *Folia* petiolo crasso 18—20 mm longo, primum sericeo, deinde subglabrescente; lamina ovato-elliptica 19.5—20.5 cm longa et 9—9.3 cm lata, caudato-acuminata, basi rotundata, coriacea, opaca, sicc. olivacea, supra glaberrima, subtus primum pilis luteis sericea, deinde costa nervisque dense adpresso pubescentibus, venulis principalibus sparse pubescentibus exceptis glabrescens, margine primum densius, deinde sparse ciliolata, nervis utroque latere costae circ. 12, basin laminae versus approximatis, apicalibus valde remotis, supra interdum subimpressis, subtus prominentibus, venulis dense reticulatis utrimque prominulis. *Stipulae* lineares, 32 mm longae et 7 mm latae, acutae, carinatae, extus dense adpresso pubescentes, intus glabrae.

Inflorescentiae parte nondum defoliata ramorum insertae; masculae floribus usque ad 13, i.e. floribus in axillis involucorum in triades decussatas dispositis, floribus triadum lateralibus bracteatis; femineae ignotae. Involucella dense adpresso pubescentia; inferius e squamis foliaribus lanceolatis acuminatis 10 mm longis et 4 mm latis, nervis utroque latere costae 4—5 munitis et e squamis stipulaceis oblongis subacutis 8 mm longis et 3.2 mm latis compositum; superius e squamis foliaribus 1-nerviis 6 mm longis et 2.5 mm latis et squamis stipulaceis 4.5 mm longis et 2.8 mm latis, bipartitis formatum. Bracteae florum lateraliū triadis 3 mm longae, extus dense adpresso pubescentes. Pedicelli sericei 1—6 mm longi. *Flos masculus*: Ovarium rudimentare 4-loculare. *Calyx* 4-merus, campanulatus, extus adpresso pubescens, intus glaber et nitens, tubo 2 mm alto; lobis ovato-triangularibus valvatis 5.5 mm longis et 4.5 mm latis. *Corolla* 6-mera alba, extus densius pubescens, basin versus glabrescens, matura non visa et tubi longitudine inde ignota; lobis 6 mm longis et 2.7 mm latis, intus dimidio inferiore barbatis. *Stamina* antheris acumine 0.5 mm longo comprehenso 2.5 mm longis. *Styloidium* supra discum vix productum, e ramulis teretibus truncatis 4 compositum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Borneensis partem septentrionalem ad altitudinem magnam.

British North Borneo; Mt Kinabalu, Gurulau spur, alt. 2400 m, J. et M. S. CLEMENS 51105 ♂ L (typus), A (dupl. typi), fl. Dec.

Prima facie *Pr. bullatae* BREM. et *Pr. coriaceae* BREM. similior, sed absentia verruculorum ab eis valde recedens. Fasciculis masculis 13-floris, calyce valvato, floribus pedicellatis a speciebus aliis generis huius diversa.

10. **Praravinia densiflora** KORTH. in Verh. Nat. Gesch. Ned. Overz. Bezitt., Bot., p. 190, tab. 41 (1839—1842); id. in Ned. Kruidk. Arch. II (2), p. 196 (1851); MIQ., Fl. Ind. Bat. II, p. 225 (1857); id. in Ann. Mus. Bot. Lugg.-Bat. IV, p. 136 (1869); BOERL., Handl. Fl. Ned. Ind. II (1) p. 65 (1891); KOORDERS in Nat. Tijdschr. Ned. Ind. LXIII, p. 73 (1904); MERR. in Journ. Asiat. Soc., Straits Branch, Special Number 1921, p. 561.

Arbor parva, 2—6 m alta. *Rami* novelli complanati et bisulcati, sex-costulati, sparse adpresso pubescentes, mox glabrescentes; veteriores cortice luteo-brunneo opaco vestiti. *Folia* petiolo gracili 7—13 mm longo, primum sparse adpresso pubescente; lamina anguste oblonga 9—16.5 cm longa et 2.5—4 cm lata, apice caudata, basi acuta, tenuior, opaca, sicc. pallida, primum utrimque sericea, deinde subtus costa nervisque dense adpresso pubescentes, ceterum

sparse adpresse pubescens, nervis utroque latere costae 10—13 subtus prominentibus, venulis laxius reticulatis subtus prominulis. *Stipulae* lineares, 15—20 mm longae et 3—5.5 mm latae, subobtusae, carinatae, extus sparse adpresse pubescentes, intus dimidio inferiore sericeae. *Inflorescentiae* plerumque parte defoliata ramorum insertae; masculae 3- vel 5-florae; femineae ad florem singulum redactae. *Involucella* sparse pubescentia, cupula brevi munita; inferius squamis ovatis 1—1.5 mm longis; superioris squamis ovato-orbicularibus vel orbicularibus 3—5 mm longis et 3.5—5 mm latis. Flores bi-bracteolati; bracteolae ovato-orbicularares 8—9 mm longae et 7—8 mm latae. *Flos masculus*: *Calyx* floris centralis fasciculi 6-merus, florum laterarium 5-merus, campanulatus, tubo brevi, lobis ovato-orbicularibus imbricatis 8—9 mm longis latisque, extus sparse pubescens, intus ad basin sericeus. *Corolla* floris centralis 12-mera, florum aliorum 10-mera, alba, tubo extus glabro 10 mm longo; lobis extus dense et intus sparse villosis 11 mm longis et 2.5 mm latis. *Stamina* antheris 3.5 mm longis. *Styloodium* in ramulos 5 vel 6 brevissime fimbriatos conniventes fissum. *Flos femineus*: *Ovarium* extus dense pubescens, 5 mm diam., loculis 8—10. *Calyx* 4-merus vel 5-merus, tubo subnullo, ceterum ut floris masculi. *Corolla* 8-, 9- vel 10-mera, ceterum ut floris masculi. *Staminodia* antheris apiculo 0.8 mm longo comprehenso 2.8 mm longis. *Stylus* 7 mm longus; stigmata 8—10 fimbriata 9.5 mm longa. *Bacca* sparse pubescens vel glabrescens, loculis 8—10.

Hab. terrae Borneensis partem austro-orientalem, ubi regione calidiore reperta est.

Borneo. Southern and Eastern Division; District Kapuas-Barito; Sub-district Muara Tewe; Tandjung Djawa, along the Barito (Duson) River, and nearby on the slope of the Praravin Hill, KORTHALS s.n. ♂ et ♀, L et U (exempla typorum); District Samarinda; Sub-district Longiram, Tepoh Tering, JAHERI 1732 BZ.

Species haec ab auctore monoica dicta et rami superiores sexu a ramis inferioribus diversi, sed dicta haec certe falsa habenda sunt, nam status ille nusquam repertus. Singula varia tabulae etiam inaccurata, e.g. forma corollae et structura ovarii.

Floribus bi-bracteolatis, corolla plerumque lobis 10—12 munita a speciebus aliis series huius faciliter distinguenda.

II. *Praravinia sericotricha* BREM. n. spec.; typus: J. et M. S. CLEMENS 28735 in herbario horti bogoriensis.

Arbor parva, 3—8 m alta. *Rami* novelli complanati, dense adpresse pubescentes; mox glabrescentes, sulcati; deinde cortice griseo opaco vestiti. *Folia* petiolo primum dense adpresse pubescente,

deinde glabrescente, 10—15 mm longo; lamina linearis-oblonga vel linearis-oblanceolata 12—19 cm longa et 2.3—4.1 cm lata, caudata, basi acuta vel cuneata, subcordata, opaca, primum supra costa et margine, subtus tota sericea, deinde costa nervisque subtus adpresso pubescentibus exceptis glabrescens, sicc. saepe olivaceo-brunnea, subtus dilute brunnea, nervis utroque latere costae 15—16 subtus prominentibus, venuis densius reticulatis subtus prominulis. *Stipulae* lineares, 20—25 mm longae et 3.5—4 mm latae, acutae, carinatae, extus sericeae, intus glabrae. *Inflorescentiae* parte nondum vel commodum defoliata ramorum insertae, masculae 3-florae, femineae ad florem singulum redactae. Involucella usque ad medium fissa, extus sericea; inferius 2 mm altum; superius lobis ovatis subacutis 4.5 mm altum. Flores omnes ebracteolati. *Flos masculus*: *Calyx* 4-merus, late campanulatus, extus intusque sericeus, tubo 2.5 mm alto; lobis ovato-orbicularibus subacutis 4—5 mm longis et 5—7 mm latis. *Corolla* 8-mera, tubo extus glabro; lobis extus apicem versus sericeis 6 mm longis. *Stamina* antheris acumine 0.5 mm longo comprehenso 2.5 mm longis. *Stylocodium* 3 mm altum, usque ad medium in ramulos 8 fissum. *Flos femineus*: *Ovarium* sericeum, 5 mm altum, 8-loculare. *Calyx* tubo subnullo, ceterum ut floris masculi. *Corolla* alba, tubo 7.5 mm longo, lobis 6 mm longis et 1.8 mm latis, ceterum ut floris masculi. *Staminodia* antheris haud apiculatis 2 mm longis. *Stylus* 5 mm longus; stigmata 8 fimbriata 6 mm longa. *Bacca* griseo-pubescentia, globosa, 12 mm diam., loculis 8.

Hab. terrae Borneensis partem septentrionalem ad altitudines satis magnas.

British North Borneo; Mt Kinabalu, at higher altitudes: Tenompok, alt. 1500 m, J. et M. S. CLEMENS 26700 ♂ BZ (co-typus), L, id. 27884 ♀ BZ, A, id. 28717 ♀ BZ, L, A, id. 28717 a ♀ BZ, L, A, id. 28735 ♀ BZ (typus), L, A (exempla typi), 28735 a ♀ BZ, L, A; Colombon River, Minatuba Spur, Lobang, alt. 2100 m, id. 33777 ♀ BZ, L, A; Gurulau Spur, M. S. CLEMENS 10850 ♀ BZ, A, NY.

Species haec et *Pr. chalcotricha* BREM. a speciebus aliis ad seriem hanc pertinentibus corolla 8-mera faciliter distinguenda; a *Pr. chalcotricha* colore indumenti prima facie noscenda; folia insuper angustiora.

12. ***Praravinia chalcotricha* BREM. n. spec.; typus J. et M. S. CLEMENS 32824 in herbario horti bogoriensis.**

Arbor parva, 2—3 m alta. *Rami* novelli complanati, dense adpresso fulvo-pubescentes, deinde glabrescentes, sulcati; postea cortice griseo opaco vestiti. *Folia* petiolo primum dense adpresso fulvo-pubescente,

deinde glabrescente, 8—12 mm longo; lamina oblonga vel oblanceolata 12—19 cm longa et 3.5—6.7 cm lata, caudata, basi acuta, subcoriacea, opaca, sicc. supra olivaceo-brunnea et subtus dilute brunnea, primum supra costa et margine, subtus tota fulvo-sericea, deinde costa nervisque subtus adpresso fulvo-pubescentibus exceptis glabrescens, subtus interdum inter nervos vix conspicue pilosa. *Stipulae* lineari-oblongae, 17—25 mm longae et 4—6 mm latae, acutae, carinatae, extus fulvo-sericeae, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae, masculae 3-florae, femineae ad florem singulum redactae. Involucella usque ad medium fissa, extus fulvo-sericea; superius lobis fasciculo pilorum breviter acuminatis. Flores omnes ebracteolati. *Flos masculus* maxime ut in specie praecedenti, sed indumento fulvo-sericeo, *calyce* interdum 5-mero, lobis fasciculo pilorum breviter acuminatis, *corolla* floris centralis 8-mera, florum laterali 6-mera. *Flos femineus* indumento fulvo-sericeo, *calyce* semper 4-mero, *corolla* 8-mera, ceterum ut in specie praecedenti. *Bacca* 8-locularis.

Hab. terrae Borneensis partem septentrionalem ad altitudines satis magnas.

British North Borneo; Mt Kinabalu, at higher altitudes: Penibukan, alt. 1200—1500 m, J. et M. S. CLEMENS 31634 ♀ BZ, A, id. 31852 ♀ BZ, L, A; Mt Nunkok, alt. 1200 m, id. 32824 ♂ BZ (typus), L, A (exempla typi).

Floribus centralibus fasciculi masculi et floribus femineis omnibus corolla 8-mera munitis ad speciem praecedentem vergens, colore fulvo indumenti, foliis latioribus ab ea recedens.

13. Praravinia sarawacensis BREM. n. spec.; typus: COLLECTOR INDIGENUS MUSEI SARAWACENSIS 2887 in herbario horti botanici noveboracensis.

Habitus ignotus. *Rami* novelli graciles, complanati, sericei, faciebus planis mox glabrescentes; veteriores cortice griseo-brunneo opaco vestiti. *Folia* petiolo gracili, primum sericeo, deinde sparse adpresso pubescente, 6—12 mm longo; lamina lineari-lanceolata 10—13 cm longa et 2.4—3.3 cm lata, apice anguste caudata, basi acuta, subcoriacea, opaca, sicc. supra saturate brunnea et subtus dilute olivaceo-viridis, supra costa primum dense et deinde sparse pubescente excepta glaberrima, subtus primum fulvo-sericea, deinde costa nervisque dense adpresso pubescens et inter nervos sparse pubescens, nervis utroque latere costae 12—14 subtus prominentibus, venulis dense reticulatis praesertim supra prominulis. *Stipulae* lineares, 15—22 mm longae et 4 mm latae, acutae, carinatae, extus fulvo-sericeae, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum

insertae, ad florem singulum redactae, haud rare duae superpositae. Involucella extus sericea; inferius cupula 1 mm alta, lobis ovato-triangularibus lateralibus 3 mm longis et 1.8 mm latis, medianis 2 mm longis et 1 mm latis; superiorius cupula 1.5 mm alta, lobis lateralibus ovatis acutis 4 mm longis et 3 mm latis, medianis lanceolatis lateralibus aequilongis sed 1.5 mm latis. *Flos masculus*: *Calyx* 4-merus, extus fulvo-sericeus, tubo 1 mm alto; lobis linearis-lanceolatis, acutis, carinatis, 8—9 mm longis, lateralibus 3 mm latis, medianis 2.2 mm latis. *Corolla* 6-mera, tubi longitudine immaturitatis causa haud determinanda; lobis extus apicem versus longe fulvo-sericeis, intus glabris, 3 mm longis et 1.2 mm latis. *Stamina* antheris brevissime apiculatis 1.5 mm longis. *Styloodium* 2 mm longum, in ramulos puberulos 4 fissum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Borneensis partem occidentalem, ubi ad altitudinem mediocrem collecta est.

Borneo. Sarawak; at the base of Mt Murud, NAT. COLL. SAR. Mus. 2887 ♂ NY (typus).

A speciebus aliis huius series calycis lobis linearis-lanceolatis (ut in *Pr. mollis* BREM.) recedens, indumento fulvo ad *Pr. chalcotricham* BREM., corolla 6-mera ad species duas sequentes vergens.

Inflorescentia non 1- vel 2-flora, sed flos uterque inflorescentia habendus, praesentia involucellorum duorum ad basin utriusque pedicelli demonstratur.

14. ***Praravinia Hallierii* BREM. n. spec.; typus: HALLIER 3253 in herbario horti bogoriensis; — *Pr. urophylloides* VAL. apud MERR. in Mitt. Inst. allg. Bot. Hamburg VII, p. 290 (1937), non VAL. in ENGL. Bot. Jahrb. XLIV, p. 556 (1910).**

Arbor parva. Rami novelli sericei, deinde adpresso pubescentes et postea glabrescentes, obtuse quadrangulares et sulcati; veteriores cortice luteo-brunneo opaco vestiti. *Folia* petiolo gracili primum sericeo, deinde sparse pubescente 8—13 mm longo; lamina linearis-oblonga 13—20 cm longa et 2.8—4.7 cm lata, caudata, basi acuta, subcoriacea, supra nitidula vel opaca, sicc. supra plerumque pallida, foliorum novellorum tamen saturate brunnea, subtus dilute brunnea, supra costa primum dense et deinde sparsissime pubescente excepta glaberrima, subtus primum sericea, deinde costa nervisque adpresso pubescens et inter nervos subglabra, nervis utroque latere costae 17—19 subtus prominentibus, venulis dense reticulatis utrimque prominulis. *Stipulae* anguste ovato-lanceolatae, 30 mm longae et 7—10 mm latae, acutae, conduplicatae, extus sericeae, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae; masculae 3-florae; femineae ad florem singulum redactae. Involucella extus

dense pubescentia, lobis apicem et marginem versus glabrescentibus tamen; inferius cupula parva, lobis triangularibus 2.5—3 mm longis; superius cupula 0.7 mm alta, lobis lateralibus ovatis acutis 9—10 mm longis et 7 mm latis, medianis linearis-ovatis 15—17 mm longis et 4.5 mm latis, carinatis. Triadis masculae flores laterales bi-bracteolati; bracteolae linearis-ovatae 6 mm longae et 1.7 mm latae, dense et longe pubescentes. *Flos masculus*: *Calyx* 4-merus, campanulatus, extus dense pubescens, intus ad basin sericeo-villosus, tubo 1.5 mm alto; lobis ovatis acutis, lateralibus 7—8 mm longis et 5.5—7 mm latis, medianis 6.5—9 mm longis et 4.5—5 mm latis. *Corolla* floris centralis 7-mera, florum lateralium 6-mera, tubo extus glabro 6 mm alto; lobis extus pubescentibus et apicem versus pilis longioribus comosis, intus glabris, 5 mm longis et 2 mm latis. *Stamina* antheris apiculo 0.2 mm longo comprehenso 2.5 mm longis. *Styloclodium* in floribus examinatis microlepidopteri eruca destructum. *Flos femineus*: *Ovarium* dense pubescens 5- vel 6-loculare. *Calyx* tubo subnullo, ceterum ut floris masculi. *Corolla ignota*. *Bacca* globosa, dense pubescens, 5- vel 6-locularis.

Hab. terrae Borneensis partem austro-occidentalem ad altitudines mediocres

Borneo. Western Division; District Sintang; Müller Mts, Amai Ambit, HALLIER 3253 ♀ BZ (typus), L, K (exempla typi); at the base of the Semedum, id. 683 ♀ BZ, L, B; Bukit Mulu, alt. 700 m, HANS WINKLER 466 ♂ NY (e HBG).

Calycis lobi ovati et indumentum griseo-sericeum speciem hanc a praecedenti distinguunt; a specie sequenti stipulis latioribus, calycis lobis majoribus, ovario 5- vel 6-loculari recedit.

15. **Praravinia hexamera** BREM. n. spec.; typus: ENDERT 3662 in herbario horti bogoriensis.

Arbor parva, usque ad 5 m alta. *Rami* novelli complanati et sulcati, primum sericei, deinde glabrescentes; veteriores cortice luteo-brunneo opaco vestiti. *Folia* petiolo gracili, primum sericeo, deinde sparse pubescente 9—13 mm longo; lamina linearis-oblonga 15—19 cm longa et 3.4—4.5 cm lata, caudata, basi acuta, subcoriacea, opaca, sicc. supra plerumque saturate brunnea, interdum tamen olivacea, foliorum novellorum lutea, subtus dilute brunnea, supra costa excepta glaberrima, subtus primum sericea, deinde costa nervisque sparse pubescentibus exceptis glabrescens, nervis utroque latere costae 19—20 subtus prominentibus, venulis dense reticulatis utrimque prominulis. *Stipulae* lineares, 22—30 mm longae et 4—5 mm latae, acutae, carinatae, extus sericeae, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae, masculae ignotae,

femineae ad florem singulum redactae. Involucella extus brunneosericea, fere ad basin partita; lobi omnes circ. 3 mm longi; lobi involucelli inferioris laterales 2—2.5 mm, mediani 1 mm lati; lobi involucelli superiores laterales 3 mm, mediani 1.6 mm lati. Bracteolae nullae. *Flos masculus* ignotus. *Flos femineus*: Ovarium brunneosericeum, 3 mm altum, 7- vel 8-loculare. Calyx 4-merus, extus brunneo-sericeus, tubo subnullo; lobis ovatis acutis 4 mm longis et 3 mm latis. Corolla 6-mera, dilute rosea, tubo extus glabro 5 mm alto; lobis extus sericeis, intus glabris, 3.5 mm longis et 1.5 mm latis. Staminodia antheris acumine inflexo 0.2 mm longo comprehenso 1.2 mm longis. Stylus 3 mm longus; stigmata 7 vel 8 fimbriata, 5 mm longa. Bacca globosa brunneo-sericea, 7 mm diam., 7- vel 8-locularis.

Hab. terrae Borneensis partem centralem ad altitudines mediocres.

Borneo. Southern and Eastern Division; West Kutai, near the River Kemul, alt. 1100 m, ENDERT 3662 ♀ BZ (typus), fl. Sept.; alt. 1200 m, id. 3576 ♀ BZ, fl. Sept.

Quomodo species haec a praecedenti distingueda, supra jam delineavi.

c. Rami novelli petiolique glabri vel rare paucis pilis longis sparsi, verruculosi. — Species 16—23.

16. Praravinia neriifolia BREM. n. spec.; typus: EVANGELISTA 641 in herbario horti botanici noveboracensis.

Arbor parva, 3 m alta. *Rami* novelli subteretes, bisulcati, pilis longis sparsissime pilosi; veteriores cortice brunneo opaco vestiti. *Folia* petiolo sparse piloso 10—15 mm longo; lamina linearis-oblonga 20—22.5 cm longa et 3.4—4.5 cm lata, in caudam longam attenuata, basi acuta, herbacea, opaca, sicc. supra pallida et subtus dilute brunnea, supra costa sparse villosa excepta glaberrima, subtus costa nervis venulis pilis longis patentibus sparse pubescens, nervis utroque latere costae circ. 15 subtus prominentibus, venulis laxius reticulatis subtus prominulis. *Stipulae* lineares, 22—27 mm longae et 3 mm latae, subobtusae, extus praesertim margine sparse pubescentes et basin versus verruculosae, intus usque ad medium sericeae, apicem versus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae, masculae 5-florae, femineae ignotae. Involucella extus sericea; inferius cupula 1 mm alta, lobis lateralibus ovatis 2 mm longis et 2.5 mm latis, medianis triangularibus 2.5 mm longis et 0.7 mm latis; superiorius cupula 1 mm alta, lobis omnibus ovatis acutis 2.5—3 mm longis latisque. Flores laterales fasciculi masculi bi-bracteolati; bracteolae obovatae 2 mm longae, dense villosae.

Flos masculus: *Calyx* 4-merus, cupularis, extus dense pubescens, intus ad basin sericeus, tubo 2.5 mm alto; lobis late triangularibus vix 0.5 mm longis. *Corolla* 8-mera, tubo extus glabro (forsitan nondum maturo) 4 mm alto; lobis extus pubescentibus, intus glabris, 4.5 mm longis et 1.8 mm latis. *Stamina* antheris vix apiculatis 2.2 mm longis. *Styloidium* 0.5 mm supra discum productum, in ramulos 6 partitum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Borneensis partem septentrionalem, ubi regione calidore reperta est.

British North Borneo; Payao River, alt. 6 m, EVANGELISTA 641 ♂ NY (typus), A (dupl. typi).

Species haec a speciebus aliis ad seriem hanc relatis praesentia pilorum longorum valde diversa. A *Pr. Creaghii* (RIDL.) BREM. cui foliorum forma et calyce breviter lobato similius ramis ad nodos et petiolis dense verruculosus, indumento sparsissimo faciliter distinguenda.

17. **Praravinia Havilandii** (RIDL.) BREM. n. comb.; *Urophyllum Havilandii* Ridl. in Journ. of Bot. LXX, p. 194 (1932).

Frutex parvus dictus. *Rami* novelli subteretes, bisulcati, glabri, 2—3 mm diam. *Folia* petiolo glabro 8—12 mm longo; lamina oblonga 15—18 cm longa et 4—5.5 cm lata, caudato-acuminata, basi subacuta, subcoriacea, subopaca, sicc. pallida, glabra, nervis utroque latere costae 10—12 et venulis dense reticulatis utrimque prominulis. *Stipulae* lineares, 15 mm longae et 2 mm latae, subacute, carinatae, extus verruculosae, margine sparse villosae, ceterum glabrae. *Inflorescentiae* parte nondum defoliata et parte commodum defoliata ramorum insertae, masculae 3-, 5- vel 7-florae vel interdum ad florem singulum redactae; femineae adhuc ignotae. *Involucella* extus glabra; inferius 2 mm diam.; superius 9 mm diam. Flores laterales fasciculorum 7-flororum axilla involucelli superioris in triades oppositas dispositi; flores laterales triadis bracteis parvis suffulti. Flores laterales fasciculorum 3-flororum bi-bracteolati. *Flos masculus*: *Calyx* 4-merus, extus glaber, intus pubescens, indistincte lobatus vel truncatus, 4 mm altus et 6 mm diam., margine ciliatus. *Corolla* 8-mera, extus glabra, tubo 4 mm longo et 2.5 mm diam.; lobis 5 mm longis et 2 mm latis. *Stamina* antheris breviter apiculatis 2 mm longis. *Styloidium* minutum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Borneensis partem septentrionalem, ubi regione calidore crescit

British North Borneo; Gaya Island, HAVILAND 1435 ♂ K (typus); s.l., WOOD 2049 ♂ K.

Floribus masculis fasciculatis, calyce non verruculoso ad speciem

praecedentem vergens, glabrate ab ea prima facie distinguenda; foliis oblongis nervos pauciores exhibentibus et stipulis brevioribus etiam ab ea recedens.

18. Praravinia bullata BREM. n. spec.; typus: J. et M. S. CLEMENS 31793 in herbario horti bogoriensis.

Arbor parva. *Rami* novelli glabri, primum complanati, deinde obtuse quadrangulares, sulcati; veteriores cortice griseo vestiti. *Folia* petiolo crasso subglabro 12—25 mm longo; lamina elliptica 15—34 cm longa et 7.3—12 cm lata, acuminata, basi rotundata sed prope petiolum subito contracta et in petiolum decurrentis, coriacea, utrimque nitidula, supra glabra, subtus costa densius, nervis sparsius pubescens, margine ciliata, sicc. haud conspicue discolorata, nervis utroque latere costae 12—20 supra impressis et subtus valde prominentibus, venuis subdense reticulatis utrimque prominulis. *Stipulae* ovato-oblongae, 30—35 mm longae et 9—18 mm latae, subacutae, margine et interdum costa ferrugineo-pilosae, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae; ornatae ad florem singulum redactae; masculae interdum axillis fasciculatae, involucello duplo tamen ut inflorescentiae uniflorae cognoscendae; femineae solitariae. Involucella extus sparse ferrugineo-pubescentia, margine ciliata; inferius cupula brevi, lobis omnibus ovatis acutis vel lateraliibus linearibus plerumque 5—6 mm longis; superius cupula 1—2.5 mm alta, lobis ovatis acutis 4.5—10 mm longis. *Flos masculus*: *Calyx* 4-merus, campanulatus, extus verruculosus et sparse pubescens, intus sericeus, tubo 6 mm alto; lobis 4 mm longis et 4—5 mm latis, obtusis. *Corolla* 8-mera, tubo extus glabro 9 mm alto, fauce dilatato; lobis extus dense pubescentibus, intus villosis, 10 mm longis et 3 mm latis. *Stamina* antheris acumine 0.5 mm longo comprehenso 4 mm longis. *Stylocodium* usque ad discum in ramulos puberulos 8 divisum, 3 mm longum. *Flos femineus*: *Ovarium* verruculosum et sparse pubescens, 7 mm altum, 8-loculare. *Calyx* 4-merus, verruculosus, tubo 2.5 mm alto; lobis ovatis acutis tubo aequilongis, extus apicem versus densius pubescentibus, deciduis. *Corolla* 8-mera, tubo extus glabro, 9 mm alto, fauce dilatato; lobis extus dense pubescentibus, intus villosis, 8 mm longis et 1.8 mm latis. *Staminodia* antheris acumine 0.5 mm longo comprehenso 3 mm longis. *Stylus* 6 mm longus; stigmata 8, fimbriata, 8 mm longa. *Bacca* lutea, sicc. nigrescens, verruculosa, subglabra, 8-locularis.

Hab. terrae Borneensis partem septentrionalem ad altitudines magnas.

British North Borneo; Mt Kinabalu, Upper Kini Taki River, alt. 2100—2400 m, J. et M. S. CLEMENS 31793 ♀ BZ (typus); id. 31795

♀ L, A; Paka Cave on the way to Low's Peak, M. S. CLEMENS 10645
 ♀ A; Colombon River, alt. 2200 m, J. et M. S. CLEMENS 33705 ♂
 BZ (co-typus), L, A.

Specimen postremum cuius flores masculi supra descripti sunt foliis et floribus majoribus a typo recedit, characteris aliis tamen bene cum eo congruit.

Inter species calyce verruculoso munitas maxime ad speciem sequentem accedit: sicut in specie illa folia elliptica, fortiter nervata, corollae lobi intus villosi sunt; ab ea tamen foliis basi rotundatis, costa subtus pubescente, nervis numerosioribus, stipulis, involucellis, calycis et corollae lobis majoribus certe distingueda.

19. Praravinia coriacea BREM. n. spec.; typus: J. et M. S. CLEMENS 34306 in herbario horti bogoriensis.

Arbor parva, 3—4.5 m alta. *Rami* novelli glabri, subcomplanati, mox quadrangulares tamen, sulcati; veteriores cortice brunneo vestiti. *Folia* petiolo crasso glabro 15—20 mm longo; lamina elliptica 12—21 cm longa et 4.8—8.4 cm lata, acuminata, basi subacuta, coriacea, utrimque nitidula, sicc. haud conspicue discolorata, utrimque glabra, margine tamen primum ciliata; nervis utroque latere costae 12—13 supra interdum subimpressis, subtus valde prominentibus, venuis subdense reticulatis utrimque prominulis. *Stipulae* ovatae, 22—24 mm longae et 14 mm latae, subacutae, extus glabrae et verruculosae, margine ferrugineo-ciliatae, intus dimidio inferiore dense ferrugineo-pubescentes. *Inflorescentiae* parte nondum defoliata ramorum insertae, ad florem singulum redactae; masculae aliquae solitariae, aliquae fasciculatae, involucello duplo tamen ut inflorescentiae uniflorae cognoscendae; femineae omnes solitariae. Involucella extus margine ciliata excepta glabra; inferius 1.2 mm altum, breviter 4-lobatum; superius cupula 1.5 mm alta, lobis late ovatis 1.5 et 0.5 mm longis. *Flos masculus*: *Calyx* 4-merus, campanulatus, extus subglaber et verruculosus, margine ciliatus, intus dense pubescens, tubo 2.5 mm alto; lobis rotundatis 1 mm longis. *Corolla* 8-mera, alba, tubo extus glabro 11 mm alto, fauce dilatato; lobis apicem versus pubescentibus, intus villosis, 5.5 mm longis et 2.5 mm latis. *Stamina* antheris acumine 0.3 mm longo comprehenso 2.8 mm longis. *Styloodium* lobatum 2 mm longum. *Flos femineus* ignotus. *Bacca* glabra et verruculosa, 8-locularis.

Hab. terrae Borneensis partem septentrionalem ad altitudines satis magnas.

British North Borneo; Mt Kinabalu, Divide Penataran Basin, crest Muruturu Ridge, J. et M. S. CLEMENS 34306 ♂ BZ (typus), L, A (exempla typi); Colombon River, Marai Parai, alt. 1350 m, id. 32398 fr. BZ, L, A.

Maxime ut *Pr. bullata* BREM., sed foliis basi subacutis, totis glabris, nervis paucioribus munitis, stipulis brevioribus, involucellis multo minoribus, calycis et corollae lobis brevioribus ab ea faciliter distinguenda.

20. *Praravinia parviflora* BREM. n. spec.; typus: HALLIER 2728 in herbario horti bogoriensis.

Habitus ignotus. *Rami* novelli glabri, complanati, mox obtuse quadrangulares; veteriores cortice brunneo opaco vestiti. *Folia* petiolo primum pubescente, deinde glabrescente, 16—20 mm longo; lamina oblonga 13—37 cm longa et 3.4—8.1 cm lata, caudato-acuminata, basi acuta, tenuis, sicc. dilute brunnea, utrimque nitidula et glabra, nervis utroque latere costae 9—11 subtus prominentibus, venulis densius reticulatis utrimque prominulis. *Stipulae* linearis, 11 mm longae et 1.5 mm latae, acutae, extus dense pubescentes, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae, ad florem singulum redactae; masculae plerumque solitariae, interdum fasciculatae tamen. *Involucella* verruculosa, margine brevissime ciliata excepta glabra; inferius minimum; superius cupula 1 mm alta, lobis 1—1.5 mm longis. *Flos masculus*: *Calyx* 4-merus, extus glaber et verruculosus, tubo 2.5 mm alto; lobis rotundatis, margine brevissime ciliatis, tubo aequilongis. *Corolla* 8-mera, tubo extus glabro 6.5 mm longo, lobis extus puberulis et intus glabris 5 mm longis et 2.5 mm latis. *Stamina* antheris acumine 0.3 mm longo comprehenso 2.2 mm longis. *Styloedium* 1.5 mm longum, in ramulos 8 filiformes fissum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Borneensis partem centralem ad altitudinem mediocrem.

Borneo; Western Division, Müller Mts, Liang Gagang, HALLIER 2728 ♂ BZ (typus), L (dupl. typi), id. 2753 ♂ BZ, L.

Foliis oblongis, plerumque maximis, sicc. dilute brunneis, tenuibus, stipulis parvis a speciebus sequentibus distinguenda.

21. *Praravinia salicifolia* BREM. n. spec.; typus: J. et M. S. CLEMENS 21716 in herbario Arboreti Arnoldiani.

Arbor parva, 1.80 m alta. *Rami* novelli glabri, complanati, mox obtuse quadrangulares, sulcati; veteriores cortice griseo-brunneo opaco vestiti. *Folia* petiolo glabro 9—12 mm longo; lamina linearis 18.5—23.5 cm longa et 2.5—3.2 cm lata, sensim in caudam longam attenuata, basi subacuta, subcoriacea, supra opaca et subtus nitidula, sicc. pallida, utrimque glabra costa nervisque subtus tamen vix conspicue adpresso pubescens et margine fugaciter ciliata, nervis utroque latere costae circ. 12 subtus prominentibus, venulis dense

reticulatis subtus prominulis. *Stipulae* lineares, 22 mm longae et 2 mm latae, subacutae, conduplicatae, extus verruculosae et adpresso pubescentes, intus glabrae. *Inflorescentiae* parte nondum defoliata ramorum insertae, ad florem singulum redactae; masculae solitariae vel duae superpositae. Involucella pubescentia; inferius cupula brevi, lobo mediano postico 1 mm, antico 3.5 mm, lobis lateralibus 2.5 mm longis; superiorius etiam cupula brevi, lobis late ovatis aequalibus 1.2 mm longis. *Flos masculus*: *Calyx* 4-merus, cupularis, subglaber et verruculosus, tubo 2.4 mm longo; lobis ovatis, ciliatis, obtusis 0.6 mm longis. *Corolla* 6-mera, alba, tubo extus glabro, longitudine immaturitatis causa haud determinanda; lobis extus puberulis et intus papillosum 4.5 mm longis et 1.5 mm latis. *Stamina* antheris acumine inflexo 0.6 mm longo non comprehenso 2.2 mm longis. *Styloidium* 1.2 mm supra discum productum, in ramulos 4 partitum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Borneensis partem occidentalem ad altitudinem mediocrem.

Sarawak; Upper Redjang River, Gat, J. et M. S. CLEMENS 21716
♂ A (typus),

Foliis linearibus et corolla 6-mera a speciebus aliis ad seriem hanc pertinentibus faciliter distinguida.

22. **Praravinia verruculosa** BREM. n. spec.; typus: J. et M. S. CLEMENS 40360 in herbario horti bogoriensis.

Arbor usque ad 14 m alta. *Rami* novelli glabri, complanati, mox obtuse quadrangulares, sulcati; veteriores cortice brunneo opaco vestiti. *Folia* petiolo glabro 8—17 mm longo; lamina lineari-oblonga vel oblanceolata 12—21 cm longa et 2.6—6.8 cm lata, apice caudato-acuminata, basi acuta, coriacea, utrimque nitidula, sicc. pallida, utrimque glabra, nervis utroque latere costae 7—10 subtus prominentibus, venulis subdense reticulatis utrimque prominulis. *Stipulae* lineares, 14—16 mm longae et 2 mm latae, acutae, conduplicatae, extus verruculosae, extus intusque glabrae, margine ciliatae tamen. *Inflorescentiae* plerumque parte nondum defoliata ramorum insertae, interdum tamen cauligenae, ad florem singulum redactae; masculae solitariae vel duae superpositae; femineae solitariae. Involucella margine ciliata excepta glabra, verruculosa; inferius minimum, interdum difficiliter distinguendum; superiorius cupula 1.2 mm alta, lobis 0.8 mm longis. *Flos masculus*: *Calyx* 4-merus, campanulatus, extus glaber et verruculosus, tubo 6 mm alto; lobis rotundatis 2 mm longis, margine ciliatis. *Corolla* 8-mera, tubo extus glabro 9 mm longo; lobis extus puberulis, intus papillosum, 6 mm longis et 3 mm latis. *Stamina* antheris acumine 0.5 mm longo comprehenso 2.8 mm

longis. *Stylocodium parvum*, paucirimum. *Flos femineus*: *Ovarium verruculosum*, 8-loculare; ceterum maxime ut flos masculus, maturus tamen nondum notus. *Bacca* 8-locularis.

Hab. terrae Borneensis partem septentrionalem ad altitudines mediocres vel satis magnas.

British North Borneo; Mt Kinabalu, Penibukan, alt. 1200 m, J. et M. S. CLEMENS 40360 ♂ BZ (typus), A (dupl. typi); id. 40395 ♀ L, A; id. 50188 ♂ L, A; Dallas, foothills, alt. 1050 m, id. 26409 ♀ BZ (co-typus), A; id. 26056 ♀ L; id. 27579 fr. L; head of Kina Taki River, alt. 1800—2100 m, id. 31716 ♀ BZ, L, A; Tenompok, alt. 1500 m, id. 29608 ♀ L.

Haec species et species sequens a praecedentibus foliis paucinerviis recedunt; a specie sequenti ramis robustioribus, foliis majoribus, bacca 8-loculari recedit.

23. Praravinia gracilis BREM. n. spec.; typus: BALAJADIA 2579 in herbario horti kewensis.

Arbor parva, 1.80 m alta. *Rami* novelli glabri, complanati, mox obtuse quadrangulares, sulcati, 1.5—2.2 mm diam.; veteriores ignoti. *Folia* petiolo glabro 8—10 mm longo; lamina linearis-oblonga 9.5—13 cm longa et 2.2—3.9 cm lata, caudata, basi acuta, subcoriacea, opaca, sicc. pallida, utrimque glabra, nervis utroque latere costae 8—10 subtus prominulis, venulis subdense reticulatis haud prominulis. *Stipulae* linearis-oblongae, 13 mm longae et 1.8 mm latae, acutae, conduplicatae, haud verruculosae, glabrae, ad marginem longe pubescentes tamen. *Inflorescentiae* parte nondum defoliata ramorum insertae, masculae ignotae, femineae ad florem singulum redactae, solitariae vel binae superpositae. *Involucella extus* glabra; *inferius* 3 mm diam.; *superius* 4 mm diam. *Flos masculus* ignotus. *Flos femineus*: *Ovarium verruculosum* glabrum 3 mm altum, 5-loculare. *Calyx* 4-merus, campanulatus, extus glaber, tubo 1 mm alto; lobis late triangularibus 0.7 mm longis. *Corolla* ignota. *Bacca* verruculosa, 5.5 mm diam., 5-locularis.

Hab. terrae Borneensis partem septentrionalem, ubi regione calidore reperta est.

British North Borneo; Bengkoka, alt. 8 m, BALAJADIA 2579 ♀ K (typus), fl. Aug.

Ovario 5-loculari a congeneribus borneensis et celebicis diversa; ceterum maxime ut species praecedens.

B. Species Celebicae. — *Calyx* tubo longo, anguste urceolato et breviter lobatus vel dentatus; pili fauce corollae inserti omnes suberecti. — Species 24—30.

24. **Praravinia Minahassae** KDS. in Nat. Tijdschr. Ned. Ind. LXIII, p. 79 (1904) p.p.; *Lasianthus Minahassae* KDS. in Med. 's Lands Plantentuin Buitenzorg XIX, p. 496 (1898) nomen tantum.

Arbor 4—15 m alta. *Rami* novelli complanati, obtuse quadrangulares, sulcati, sparse molliter pubescentes, deinde glabrescentes; veteriores cortice luteo-albo vestiti. *Folia* petiolo gracili 14—20 mm longo, primum adpresso pubescente, deinde glabrescente; lamina lanceolata vel elliptica 15—20 cm longa et 5—7.5 cm lata, caudata, basi acuta, subcoriacea, opaca, sicc. haud conspicue discolorata, margine costa nervisque subtus primum adpresso pubescens, deinde glabrescens, nervis utroque latere costae circ. 14 subtus prominentibus, venuulis dense reticulatis utrimque distinguendis. *Stipulae* oblongae, 24—30 mm longae et 7—10 mm latae, obtusae, extus pubescentes, intus sericeae sed marginem versus glabrescentes. *Inflorescentiae* parte commodum defoliata ramorum insertae, ad florem singulum redactae; masculae solitariae vel binae superpositae. *Involucella* extus pubescentia, adpressa; inferius cupula 2 mm alta, lobis duobus late ovatis et duobus linearibus 3 mm longis; superius cupula 5 mm alta, lobis ovatis subacutis 4 mm longis. *Flos masculus*: *Calyx* 4-merus tubo crasso urceolato, extus glabro, intus sericeo, 10 mm longo, dimidio inferiore globoso 6 mm diam., dimidio superiore cylindrico 5 mm diam.; lobis orbicularibus, obtusis et cucullatis, extus glabris, margine breviter et sparse ciliatis, intus ad basin sericeis, marginem versus glabrescentibus, imbricatis. *Corolla* 9- vel 10-mera extus glabra, longitudine tubi immaturitatis causa haud determinanda, pilis fauce insertis omnibus suberectis; lobis intus glabris 5 mm longis et 1.2 mm latis. *Stamina* antheris apiculatis 2 mm longis. *Stylocodium* 3 mm longum, e basi conica cylindricum striatum, in ramulos 9—10 breves (0.5 mm longos) exiens. *Flos femineus* et *bacca* ignoti.

Hab. terrae Celebicae partem septentrionalem ad altitudines humiliores vel mediocres.

Celebes; Minahassa; Popo-Karowa, alt. 200 m, KOORDERS 18731 ♂ BZ (typus), L (dupl. typi), fl. Apr.; crest of Lobombulan, alt. 1200 m, id. 18716 ♂ BZ, L, K, B, P, fl. Mai.

Floribus 9- vel 10-meris, foliis non longe-caudatis *Pr. loconensi* BREM. et *Pr. celebicae* BREM. similis, a' *Pr. celebica* calyce distincte lobato recedens, a *Pr. loconensi* foliis latioribus, nervos plures exhibentibus, involucellis majoribus, calycis forma distinguenda.

25. **Praravinia loconensis** BREM. n. spec.; typus: KOORDERS 18608 in herbario horti bogoriensis; *Pr. Minahassae* KDS. in

Nat. Tijdschr. Ned. Ind. LXIII, p. 79 (1904) p.p., haud quoad typum.

Arbor parva, 1.5—2 m alta. *Rami* novelli complanati, obtuse quadrangulares, sulcati, primum molliter et satis dense pubescentes, deinde sparse pubescentes; veteriores cortice luteo-albo, deinde dilute brunneo, opaco vestiti. *Folia* petiolo gracili 10—18 mm longo, primum molliter et satis dense pubescente, deinde glabrescente; lamina linearis-oblonga vel linearis-oblanceolata 15—18 cm longa et 4.5—5.8 cm lata, caudata, basi acuta vel cuneata, subcoriacea, opaca, sicc. haud conspicue discolorata, primum margine et costa nervisque utrimque molliter pubescens et inter nervos arachnoidea, deinde tota glabrescens, nervis utroque latere costae circ. 9 subtus prominentibus, venulis dense reticulatis utrimque distinguendis. *Stipulae* lineares, 23 mm longae et 5 mm latae, obtusae, extus villosae, intus subglabrae. *Inflorescentiae* parte commodum defoliata ramorum insertae, ad florem singulum redactae, solitariae. Involucella extus subglabra, adpressa; inferius cupula 1 mm alta, lobis ovato-triangularibus 1.5 mm longis; superius cupula 2 mm alta, lobis late ovatis subacutis 1.5 mm longis. *Flos masculus*: *Calyx* 4-merus tubo oboviedo 8 mm alto et 6.5 mm diam., extus glabro; lobis ovato-triangularibus obtusis 2 mm longis, haud cucullatis, extus sparse pubescentibus, intus subglabris. *Corolla* 10-mera, extus glabra, tubi longitudine immaturitatis causa haud determinanda, pilis fauce insertis omnibus suberectis; lobis 7 mm longis et 1.5 mm latis. *Stamina* antheris 2 mm longis. *Styloidium* immaturum. *Flos femineus* ignotus. *Bacca* globosa, calyce cylindrico 5 mm longo coronata, glabra, 10-locularis.

Hab. terrae Celebicae partem septentrionalem ad altitudinem mediocrem.

Celebes; *Minahassa*; G. Lokon, alt. circ. 1250 m, KOORDERS 18608 ♂ BZ (typus); L (dupl. typi); id. 18730 BZ (sterile); id. 19219 fr. BZ, L.

Species haec a KOORDERS cum specie praecedenti confusa ab ea foliis angustioribus, nervos pauciores exhibentibus, involucellis minoribus, calycis tubo breviore et in dimidio superiore haud cylindrico, corollae lobis longioribus certe distinguenda.

26. *Praravinia celebica* BREM. n. spec.; typus: KJELLEBERG 986 in herbario horti bogoriensis.

Arbor parva 5 m alta. *Rami* novelli molliter pubescentes, mox glabrescentes tamen, complanati, bisulcati, deinde subteretes, graciles. *Folia* petiolo primum molliter et dense, deinde sparsius pubescente, 12—15 mm longo; lamina lanceolata 12—17 cm longa et 3.5—5.2 cm lata, caudata, basi acuta, subcoriacea, opaca, sicc. pallide viridis,

primum supra costa et subtus costa nervisque dense et molliter pubescens et inter nervos subtus sparse pubescens, deinde costa nervisque subtus exceptis glabrescens, nervis utroque latere costae 10—14, venulis dense reticulatis supra prominulis, subtus interdum vix distinguendis. *Stipulae* lineares, 13 mm longae et 1.5 mm latae, acutae, extus sericeae, intus glabrae. *Inflorescentiae* parte nondum vel commodum defoliata ramorum insertae, ad florem singulum redactae, solitariae. Involucella extus subglabra, parva. *Flos masculus*: *Calyx* 4-merus, urceolatus, extus glaber, margine ciliatus tamen, intus sericeus, breviter repando-dentatus, 7 mm altus et 6.5 mm diam. *Corolla* 10-mera, extus glabra, pilis fauce insertis omnibus erectis, dimensionibus immaturitatis causa haud determinandis. *Stamina* antheris apiculo 0.3 mm longo comprehenso 2.5 mm longis. *Styloodium* immaturum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Celebicae partem austro-orientalem, ad altitudinem mediocrem.

Celebes; Govt. Celebes & Dep., Kendari, Tawanga, B. Watuwila, alt. 600 m, KJELLBERG 986 ♂ BZ (typus).

Affinitates species huius paupertate speciminis difficiliter determinandae; corolla 10-mera ad species praecedentes accedere videtur; ab eis calycis lobis minimis tamen valde recedit.

27. Praravinia montana BREM. n. spec.; typus: KJELLBERG 1929 in herbario horti bogoriensis.

Arbor parva, 4—5 m alta. *Rami* novelli glabri, complanati, mox subquadrangulares, haud conspicue sulcati; veteriores cortice griseo opaco vestiti. *Folia* petiolo gracili glabro 15—20 mm longo; lamina lanceolata 15—16.5 cm longa et 3.7—6.2 cm lata, anguste caudata, basi acuta, tenuis, opaca, sicc. dilute brunnea, primum costa utrimque et nervis subtus dense et molliter pubescens, ceterum utrimque sparse pilosa, ultimo glabrescens, costa haud canaliculata, nervis utroque latere costae 11—12 subtus prominentibus, venulis dense, reticulatis subtus distinguendis. *Stipulae* lineares, 20—22 mm longae et 2.5—3 mm latae, extus glabrae, intus ad costam sericeae. *Inflorescentiae* parte nondum defoliata ramorum insertae, ad florem singulum redactae; masculae ignotae; femineae solitariae. Involucella basi dense, apices loborum versus sparse pubescentia. *Flores* ignoti. *Bacca* globosa, calyce 4-mero e tubo cylindrico 3 mm alto et lobis 1 mm longis constante coronata, subglabra, 8-locularis.

Hab. terrae Celebicae partem centralem, ubi ad altitudinem satis magnam collecta est.

Celebes; Govt. Celebes & Dep., Todjambu, east of Palopo, alt. 1000 m, KJELLBERG 1929 fr. BZ (typus).

Species haec imperfecte nota bacca 8-loculari et foliis anguste caudatis ad speciem sequentem accedere videtur; foliis tenuioribus, costa haud canaliculata, floribus parte nondum defoliata ramorum insertis ab ea tamen valde diversa.

28. Praravinia cauliflora BREM. n. spec.; typus: KJELLBERG 2655 in herbario horti bogoriensis.

Arbor parva. Rami novelli glabri, complanati, haud distincte sulcati; veteriores ignoti. *Folia* petiolo gracili 12—15 mm longo, apicem versus pubescente; lamina linearis-oblanceolata 14—18.5 cm longa et 2.8—4 cm lata, longe et anguste caudata, basi acuta, subcoriacea, sicc. dilute brunnea vel supra grisea, primum supra costa et margine, subtus tota sericeo-pubescentis, deinde subtus costa nervisque adpresso pubescentibus exceptis glabrescens, nervis utroque latere costae circ. 7 subtus prominentibus, venulis dense reticulatis utrimque distinguendis. *Stipulae* lineares, 23 mm longae et 3.5 mm latae, extus apicem versus pubescentes, margine ciliatae, intus basin versus sericeae. *Inflorescentiae* cauligenae, ad florem singulum redactae. *Involucella* subglabra, margine ciliata; inferius minimum; superius cupula 1.5 mm alta, lobis triangularibus 2.5 mm longis. *Flos masculus*: *Calyx* 4-merus cupularis extus glaber, tubo 5 mm alto et 9 mm diam., lobis ovato-triangularibus subacutis 2 mm longis, margine ciliatis, intus sericeis. *Corolla* 8-mera, eburnea, extus glabra, tubo 10 mm longo et 4.5 mm diam., pilis fauce insertis omnibus suberectis; lobis ad basin barbatis, ceterum glabris, 10 mm longis et 1.7 mm latis. *Stamina* antheris apiculo 0.8 mm longo comprehenso 4.2 mm longis. *Styloodium* 5 mm longum, fere usque ad basin in ramulos 6—7 puberulos partitum. *Flos femineus* et *bacca* ignoti.

Hab. terrae Celebicae partem centralem ad altitudinem satis magnam.

Celebes; Govt. Celebes & Dep., B. Porema, alt. 1400 m, KJELLBERG 2655 ♂ BZ (typus), fl. Jun.

Inflorescentias cauligenis faciliter a speciebus aliis Celebicis noscenda.

29. Praravinia robusta BREM. n. spec.; typus: KJELLBERG 1735 in herbario horti bogoriensis.

Arbor parva. Rami novelli nondum noti, sed rami paulo veteriores nondum defoliati crassi, 8 mm diam., obtuse quadrangulares, haud profunde sulcati, glabri. *Folia* petiolo glabro 22—30 mm longo; lamina linearis-oblunga 28—37 cm longa et 6—8.6 cm lata, caudata, basi acuta, subcoriacea, opaca, sicc. haud conspicue discolorata, costa

nervisque subtus sparse pubescentibus exceptis glabra, costa profunde canaliculata, nervis utroque latere costae 14—15 subtus prominentibus, venuis laxe reticulatis subtus prominulis. *Stipulae* ovato-oblongae, 35 mm longae et 14 mm latae, subacutae, extus glabrae, intus sericeae, marginem versus glabrescentes tamen. *Inflorescentiae* parte nondum defoliata ramorum insertae, masculae ignotae, femineae ad florem singulum redactae, solitariae. *Flores* ignoti. *Bacca* globosa, calyce 4-mero e tubo cylindrico 4.5 mm alto constante coronata, glabra, 6-locularis.

Hab. terrae Celebicae partem centralem, ubi regione calidiore reperta est.

Celebes; Govt. Celebes & Dep., Todjambu, east of Palopo, KJELLBERG 1735 fr. BZ (typus).

Ramis crassis, foliis stipulisque magnis a speciebus aliis celebicus faciliter distinguenda; ovario 6-loculari ad speciem sequentem vergens.

30. **Praravinia Teysmannii** Kds. in Nat. Tijdschr. Ned. Ind. LXIII, p. 75 (1904).

Arbor 7 m alta. *Rami* novelli graciles, dense et molliter pubescentes, complanati, sulcati; veteriores cortice griseo opaco vestiti. *Folia* petiolo primum dense et molliter, deinde sparse pubescente, 6—10 mm longo; lamina linear-lanceolata 9—16.5 cm longa et 2—3.8 cm lata, caudata, basi cuneata, subcoriacea, opaca, sicc. supra pallida et subtus dilute brunnea vel viridis, primum margine et costa nervisque utrimque dense et molliter pubescens, deinde costa nervisque subtus adpresso pubescens et ceterum glabra, nervis utroque latere costae 8—12 supra interdum impressis, subtus prominentibus, venuis dense reticulatis utrimque distinguendis. *Stipulae* lineares, 10—13 mm longae et 1.5—2 mm latae, acutae, extus dense et molliter pubescentes, intus ad costam longe pilosae. *Inflorescentiae* parte nondum defoliata ramorum insertae; masculae ignotae; femineae solitariae, ad florem singulum redactae, involucellis interdum tribus circumdatae. Involucella extus dense pubescentia; inferius cupula 1 mm alta, lobis ovatis 1.5 mm longis; superius cupula aequilonga, lobis duobus triangularibus et duobus ovatis, 2—2.5 mm longis. *Flos masculus* ignotus. *Flos femineus*: *Ovarium* dense pubescens 3 mm altum, 6-loculare. *Calyx* 4-merus, extus dense pubescens, intus sericeus, tubo pariete crassa 3 mm alto et 3.5 mm diam.; lobis late triangularibus 0.5 mm longis. *Corolla* 6-mera, viridula, tubo extus tomentoso, basin versus glabrescente, 9 mm longo et 2.7 mm diam., pilis fauce insertis omnibus suberectis; lobis 7 mm longis et 1.2 mm latis. *Staminodia* antheris acumine 0.2 mm longo

comprehenso 2.0 mm longis. *Stylus* 8.5 mm longus; stigmata 6, basi glabra, ceterum longe fimbriata, 8 mm longa. *Bacca* globosa, 10 mm diam., breviter adpresso pubescens, calyce coronata, plerumque 6-locularis, interdum tamen usque ad 10 loculos exhibens.

Hab. terrae Celebicae partes australem et centralem, ubi regione calidiora crescit.

Celebes; Govt. Celebes & Dep., Bonthain, Papepekang, alt. o m, TEYSMANN 13682 et 13683 fr. BZ (typi); Palopo, alt. o m, KJELLBERG 1975 ♀ BZ (co-typus meus); specimen a KJELLBERG lectum induimento densiore a typo recedit.

A *Pr. celebica* BREM. et *Pr. montana* BREM. quibus habitu similior foliis angustioribus, brevius petiolatis certe distinguenda.

Index specierum in genere *Praravinia* nuncupatarum.

(de speciebus 31—49 philippinensisibus alio loco tractatum est.)

32. **acuminata** (MERR.) BREM. (*Urophyllum acuminatum* MERR. in Philipp. Journ. Sc. I, Suppl. p. 129, 1906).
43. **affinis** (MERR.) BREM. (*Urophyllum affine* MERR. in Philipp. Journ. Sc. XVII, p. 481, 1920).
6. **borneensis** (MERR.) BREM. n. comb. (*Williamsia borneensis* MERR. in Univ. Calif. Publ., Bot. XV, p. 282, 1929).
18. **bullata** BREM. n. spec.
28. **cauliflora** BREM. n. spec.
26. **celebica** BREM. n. spec.
12. **chalcotricha** BREM. n. spec.
19. **coriacea** BREM. n. spec.
7. **Creaghii** (RIDL.) BREM. n. comb. (*Urophyllum Creaghii* RIDL. in Journ. of Bot. LXX, p. 193, 1932).
10. **densiflora** KORTH. in Verh. Nat. Gesch. Ned. Overz. Bezitt., Bot., p. 190, 1839—1842.
36. **Everettii** MERR. in Philipp. Journ. Sc. X, Bot. p. 107, 1915.
37. **glabra** (MERR.) BREM. (*Williamsia glabra* MERR. in Philipp. Journ. Sc. X, Bot., p. 108, 1915).
23. **gracilis** BREM. n. spec.
14. **Hallierii** BREM. n. spec.
17. **Havilandii** (RIDL.) BREM. n. comb. (*Urophyllum Havilandii* RIDL. in Journ. of Bot. LXX, p. 194, 1932).
15. **hexamera** BREM. n. spec.
25. **loconensis** BREM. n. spec.
41. **Loheri** (MERR.) BREM. (*Williamsia Loheri* MERR. in Philipp. Journ. Sc. XXVII, p. 58, 1925).

45. **longistipula** (MERR.) BREM. (*Williamsia longistipula* MERR. in Philipp. Journ. Sc. XVII, p. 485, 1920).
35. **lucbanensis** (ELM.) BREM. (*Urophyllum lucbanense* ELM., Leafl. Philipp. Bot. I, p. 71, 1906).
2. **megistocalyx** BREM. n. spec.
31. **microphylla** (MERR.) BREM. (*Urophyllum microphyllum* MERR. in Philipp. Journ. Sc. XII, Bot. p. 161, 1917).
38. **mimica** (MERR.) BREM. (*Williamsia mimica* MERR. in Philipp. Journ. Sc. XXVI, p. 495, 1925).
24. **Minahassae** KDS. in Nat. Tijdschr. Ned. Ind. LXIII, p. 79, 1904.
40. **mindanaënsis** (ELM.) BREM. (*Williamsia mindanaënsis* ELM., Leafl. Philipp. Bot. V, p. 1904, 1913).
8. **mollis** BREM. n. spec.
27. **montana** BREM. n. spec.
47. **multinervia** (MERR.) BREM. (*Williamsia multinervia* MERR. in Philipp. Journ. Sc. X, Bot. p. 107, 1915).
46. **negrosensis** (MERR.) BREM. (*Urophyllum negrosense* MERR. in Philipp. Journ. Sc. V, Bot. p. 247, 1910).
16. **neriifolia** BREM. n. spec.
9. **oresitropha** BREM. n. spec.
44. **panayensis** (MERR.) BREM. (*Williamsia panayensis* MERR. in Philipp. Journ. Sc. XVII, p. 484, 1920).
20. **parviflora** BREM. n. spec.
4. **polymera** BREM. n. spec.
49. **pubescens** (QUISUMB. et MERR.) BREM. (*Williamsia pubescens* QUISUMB. et MERR. in Philipp. Journ. Sc. XXXVII, p. 210, 1928).
34. **quadibracteolata** (MERR.) BREM. (*Urophyllum quadibracteolatum* MERR. in Philipp. Journ. Sc. XVII, p. 483, 1920).
29. **robusta** BREM. n. spec.
42. **sablanensis** (ELM.) BREM. (*Urophyllum sablanense* ELM., Leafl. Philipp. Bot. I, p. 39, 1906).
21. **salicifolia** BREM. n. spec.
13. **sarawacensis** BREM. n. spec.
11. **sericotricha** BREM. n. spec.
39. **stenophylla** (MERR.) BREM. (*Williamsia stenophylla* MERR. in Philipp. Journ. Sc. XXVII, p. 59, 1925).
1. **suberosa** (MERR.) BREM. n. comb. (*Urophyllum suberosum* MERR. in Journ. Asiat. Soc., Mal. Branch I, p. 40, 1923).
5. **subtomentosa** BREM. n. spec.
30. **Teysmannii** KDS. in Nat. Tijdschr. Ned. Ind. LXIII, p. 75, 1904.

48. *triflora* (QUISUMB. et MERR.) BREM. (*Williamsia triflora* QUISUMB. et MERR. in Philipp. Journ. Sc. XXXVII, p. 210, 1928).
 3. *urophyloides* VAL. in ENGL. Bot. Jahrb. XLIV, p. 556, 1910.
 22. *verruculosa* BREM. n. spec.
 33. *viridescens* (ELM.) BREM. (*Williamsia viridescens* ELM., Leafl. Philipp. Bot. IX, p. 3215, 1934).

Index specierum in generibus aliis nuncupatarum ad *Praraviniam* traductarum.

- Lasianthus Minahassae* KDS. in Med. 's Lands Plantentuin Buitenzorg XIX, p. 496, 1898, nomen nudum = **Pr. Minahassae**.
Urophyllum acuminatum MERR. in Philipp. Journ. Sc. I, Suppl., p. 129, 1906 = **Pr. acuminata**.
Urophyllum affine MERR. in Philipp. Journ. Sc. XVII, p. 481, 1920 = **Pr. affinis**.
Urophyllum Creaghii RIDL. in Journ. of Bot. LXX, p. 193, 1932 = **Pr. Creaghii**.
Urophyllum Havilandii RIDL. in Journ. of Bot. LXX, p. 194, 1932 = **Pr. Havilandii**.
Urophyllum lucbanense ELM., Leafl. Philipp. Bot. I, p. 71, 1906 = **Pr. lucbanensis**.
Urophyllum microphyllum MERR. in Philipp. Journ. Sc. XII, Bot. p. 161, 1917 = **Pr. microphyllea**.
Urophyllum negrosense MERR. in Philipp. Journ. Sc. V, Bot. p. 247, 1910 = **Pr. negrosensis**.
Urophyllum quadibracteolatum MERR. in Philipp. Journ. Sc. XVII, p. 483, 1920 = **Pr. quadibracteolata**.
Urophyllum sablanense ELM., Leafl. Philipp. Bot. I, p. 39, 1906 = **Pr. sablanensis**.
Urophyllum suberosum MERR. in Journ. Asiat. Soc., Mal. Branch I, p. 40, 1923 = **Pr. suberosa**.
Williamsia borneensis MERR. in Univ. Cal. Publ., Bot. XV, p. 282, 1929 = **Pr. borneensis**.
Williamsia caudata MERR. in Philipp. Journ. Sc. IX, Bot. p. 389, 1914 = **Pr. mindanaensis** vel species affinis.
Williamsia Everettii (MERR.) MERR., Enum. Philipp. Pl. III, p. 524, 1923 = **Pr. Everettii**.
Williamsia glabra MERR. in Philipp. Journ. Sc. X, Bot. p. 108, 1915 = **Pr. glabra**.
Williamsia Loheri MERR. in Philipp. Journ. Sc. XXVII, p. 58, 1925 = **Pr. Loheri**.

- Williamsia longistipula* MERR. in Philipp. Journ. Sc. XVII, p. 485,
 1920 = **Pr. longistipula**.
Williamsia mimica MERR. in Philipp. Journ. Sc. XXVI, p. 495,
 1925 = **Pr. mimica**.
Williamsia mindanaensis ELM., Leafl. Philipp. Bot. V, p. 1904,
 1913 = **Pr. mindanaensis**.
Williamsia multinervia MERR. in Philipp. Journ. Sc. X, Bot. p. 107,
 1915 = **Pr. multinervia**.
Williamsia panayensis MERR. in Philipp. Journ. Sc. XVII, p. 484,
 1920 = **Pr. panayensis**.
Williamsia pubescens QUISUMB. et MERR. in Philipp. Journ. Sc.
 XXXVII, p. 210, 1928 = **Pr. pubescens**.
Williamsia sablanensis (ELM.) MERR. in Philipp. Journ. Sc. III, Bot.
 p. 165, 1908 = **pr. sablanensis**.
Williamsia stenophylla MERR. in Philipp. Journ. Sc. XXVII, p. 59,
 1925 = **Pr. stenophylla**.
Williamsia triflora QUISUMB. et MERR. in Philipp. Journ. Sc.
 XXXVII, p. 210, 1928 = **Pr. triflora**.
Williamsia viridescens ELM., Leafl. Philipp. Bot. IX, p. 3215,
 1934 = **Pr. viridescens**.

Index speciminum borneënsium et celebicorum prolatorum.

(Speciminum numeri a numeris hic speciebus impositis uncis inclusis
 secuti; si specimen ut species typus habendum est, numerus specifi-
 cus asterisco signatus).

- AGAMA 663 (1).
 AMDJAH 258 et 330 (6); 466 (5*); 631, 778 et 830 (6).
 ARSAT 683 (7).
 BALAJADIA 2579 (22*).
 CLEMENS (M. S.) 10645 (18); 10850 (11).
 CLEMENS (J. et M. S.) 21716 (21*); 26056 et 26409 (22); 26700 (11);
 27579 (22); 27884, 28717 et 28717 a (11); 28735 (11*); 28735 a
 (11); 29608 (22); 31634 (12), 31716 (22); 31793 (18*); 31795 (18);
 31852 (12); 32398 (19); 32824 (12*); 33705 (18); 33777 (11);
 34306 (19*); 40360 (22*); 40395 et 50188 (22); 51105 (9*).
 COLL. INDIG. cf. NAT. COLL.
 CREAGH s.n. (7*).
 ELMER 20140 (7); 20173 (1); 20463 (6*); 20464 (6); 20787 (1).
 ENDERT 2202 (4*); 3576 (15); 3662 (15*); 3678 (2*).
 EVANGELISTA 641 (16*); 950 (8); 963 (8*).
 HALLIER 683 (14); 2728 (20*); 2753 (20); 3253 (14*).
 HAVILAND 1435 (17*).

- JAHERI 1732 (10).
KAMIS 4282 (6).
KJELLBERG 986 (26*); 1735 (29*); 1929 (27*); 1975 (30); 2655 (28*).
KLOSS 19040 (1).
KOORDERS 18608 (25*); 18716 (24); 18730 (25); 18731 (24*); 19219 (25).
KORTHALS s.n. (10*).
MAIDIN 2331 (6).
NAT. COLL. SAR. MUS. 2887 (13*).
RAMOS 1199 (7); 1472 (1*).
RUTTEN 104 (7).
SALES 1483 (7); 3857 (6).
TEYSMANN 13682/3 (30*).
VALERA 4316 (8).
VILLAMIL 239 et 378 (6).
WOOD 2049 (17).
WINKLER, HANS 466 (14).
WINKLER, HUB. 3184 (3*).
-